

Civil Aviation Organization

Flight Operation Officer

Written Exam

2nd Edition

NOV 2016





IRANBOOKLET

مرجع آزمون های شبیه سازی شده هوانوردی

**مطالعه گر گرامی فایل پیش رو از وب سایت
ایران بوکلت دانلود شده است.
ایران بوکلت مدرن ترین و اقتصادی ترین سامانه
شبیه سازی آزمون برای تمامی رشته های
هوانوردی اعم از خلبانی ، دیسپچری ،
مهماننداری ، تعمیر و نگهداری هواپیما می باشد.
از شما دعوت میکنیم حتما از سامانه ما به نشانی
IranBooklet.ir بازدید فرمایید**

IN THE NAME OF GOD

The second edition of this book based on the first edition, shares new upcoming issues and questions regarding nowadays ongoing aviation knowledge.

By developing aviation industry, continuously control for updating this question bank is highly in need of attention.

Please do not hesitate to contact us, if there is any suggestion for implementing in 3rd edition.

Nov 2016

Introduction:

What to Expect for your flight operation officer

The Aircraft dispatcher practical test process

As with any testing process, the more you know about it, the less stressful and overwhelming it is. The aircraft dispatcher certification is not overly difficult to acquire. The information you must know prior to sitting for the CAO practical test is fairly straightforward; flight operation officer certification does require knowledge in a wide range of subject areas which would necessitate a tremendous amount of study and preparation. Applicants who put in ample study time and take advantage of available preparation tools, such as this book, should be well prepared for the test. While this book is an excellent means of preparing for the flight dispatcher practical test and is based upon actual question used on practical tests, it should not be the only source of study. Applicants should first participate in ground school course specific to dispatchers and / or read the books listed under “References” (below), then conclude their study with a comprehensive review of this book.

Practical Test Standards (PTS)

The Civil Aviation Organization (CAO) publishes guides to the practical tests for each certification that issue, known as the practical test standards (PTS). The PTS guides tell applicants exactly what to expect, what subject areas or tasks will be covered. And what they need to bring with them on test day. The PTS for the ADX is designated and CAO can be found on the CAO website or in paint.

CAO documents pilot (ATP) The PTS are broken into several parts: areas of operation, tasks, and references. Areas of operation form an outline of what general subjects will be covered. Although they are presented in a logical sequence according to the CAO. Examiner do not necessarily follow this order. Tasks are the actual knowledge areas or procedures that will be covered under each area of operation. References are provided for each area of operation and task in order to provide applicants the source documents examiners all defer to for the correct responses. Applicants should study these documents in preparation for the exam.

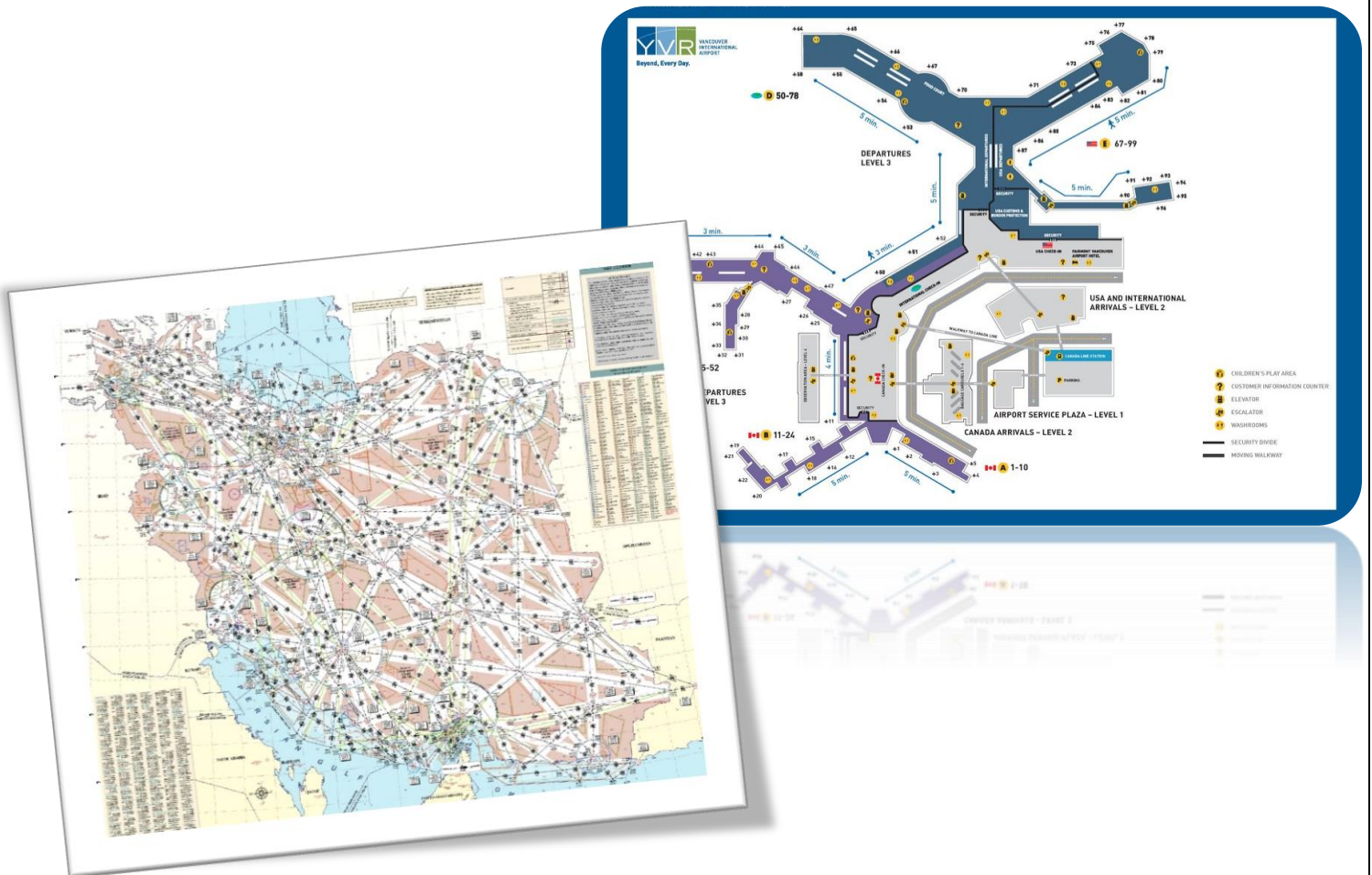
The list below includes these PTS references, as well as additional resources helpful in preparing for your ADX exam.

Examiners are required to use the PTS. They are also technically required to cover all areas of operation and their associated tasks. Some omissions are permissible, for example, a certain technology or piece of equipment is not available at the testing site. It is advisable, though, to be prepared for all areas of operation and tasks. It is also possible that the examiner will venture outside the confines of the PTS to probe the applicant in subjective areas such as judgment, decision making, and ethics.

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Aeronautical Information Publication



1- Where can you find the difference between ICAO standards and Iran regulation and procedure?

- A) GEN 2.5
- B) ENR 3
- C) GEN 1.7
- D) ENR 1

2- Which part of AIP contain conversion table?

- A) GEN 1
- B) GEN 2
- C) ENR 1
- D) AD 1

3- Which part of AIP contains measuring system?

- A) GEN 2
- B) ENR 1
- C) ENR2
- D) AD 1

4- Which one of following statement is correct "EP - TSC" is?

- A) EP - TSC is a registration mark
- B) EP is a nationality mark
- C) TSC is a registration mark
- D) "B" and "c" are correct

5- The location indicator "OICK" is for?

- A) Boroujerd
- B) Khoramabad
- C) Sanandaj
- D) Ilam

6- Where can we find the abbreviations used in AIS publication?

- A) GEN 2
- B) GEN 3
- C) ENR 1
- D) ENR 3.1

7- Which part of AIP contains the list of radio navigation aids?

- A) ENR 1
- B) ENR 4
- C) GEN 2.5
- D) GEN 3

8- Which part of AIP contains the radio navigation aids/systems?

- A) ENR 4
- B) ENR 1
- C) GEN 2.5
- D) GEN3

9- What is the accuracy of the location of navigational aids measured by GPS in Iran?

- A) ± 10 meters
- B) ± 5 m
- C) Within 8 meters
- D) b, c

10- The Aghajari NDB may be used as a facility for the purpose of?

- A) Aerodrome
- B) Enroute
- C) Off route navigation aid
- D) A, B are correct

11- What is the purpose of using "Ilam" DVOR/DME?

- A) Aerodrome facility
- B) Enroute facility
- C) Off route navigation aid
- D) A, B are correct

12- What is the accuracy of sunrise and sunset time published in AIP?

- A) less than 3 min
- B) less than 2 min
- C) 2 min
- D) 3 min

13- What is the color of regular AIP amendment cover sheet paper?

- A) Blue
- B) Pink
- C) Red
- D) Yellow

14- What is the color of AIRAC amendment cover sheet paper?

- A) Blue
- B) Pink
- C) Red
- D) Yellow

15- The color of AIP supplement paper is

- A) Blue
- B) Pink
- C) Red
- D) Yellow

16- Which temporary changes may be included in AIP supplement?

- A) 2 months
- B) 3 month and longer
- C) 1 month
- D) 4 month & longer

17- Which section of AIP contains the information of "NOTAM"?

- A) GEN 2
- B) ENR 3
- C) GEN 3
- D) ENR 1

18- The series of international NOTAM is

- A) A
- B) B
- C) C
- D) R

19- The series of non-international NOTAM is

- A) A
- B) B
- C) C
- D) N

20- What is the series of domestic NOTAM?

- A) A
- B) B
- C) C
- D) C

21- NOTAM "A" contain information regarding operation of?

- A) International
- B) Domestic
- C) IFR
- D) All answer correct

22- NOTAM "B" contain Information aboutoperation.

- A) International
- B) Domestic
- C) Snow
- D) All answer are correct

23- What is the validity of "SNOWTAM"?

- A) 12 h
- B) 30 min
- C) 24 h
- D) 60 mm

24- The SNOWTAM contain information about:

- A) Slush
- B) Snow
- C) Compacted snow
- D) All answer are correct

25- What is the meaning of "NOTAM C"?

- A) Replace
- B) Cancel
- C) New
- D) Snow

26- What is the meaning of "NOTAM R"?

- A) Replace
- B) New
- C) Cancel
- D) Snow

27- What is the meaning of "NOTAM N"?

- A) Snow
- B) New
- C) Cancel
- D) Replace

28- In Which Iranian airspace VFR flight is authorized to operate?

- A) B, C, D
- B) B, D
- C) D, E
- D) C, D

29- VFR flight shall not operate at night within Tehran FIR but may be authorized to operate in aerodrome traffic zone by coordination with ATS authority:

- A) True
- B) False

30- What is the minimum height above obstacle for IFR flight within Tehran FIR, if minimum flight level has not been establish?

- A) 1000'
- B) 1500'
- C) 2000'
- D) 2500'

31- Which section of AIP contains information about "meteorological service"?

- A) GEN3
- B) ENR3
- C) GEN3.5
- D) ENR4

32- How many ATS MET reporting station are specified in Iran?

- A) 3
- B) 4
- C) 5
- D) 6

33- How many compulsory ATS MET reporting stations are specified in Iran?

- A) 3
- B) 4
- C) 5
- D) 6

34- In which part of AIP we can find the "on request" ATS MET reporting station?

- A) ENR 3
- B) GEN 2
- C) GEN 3.5
- D) ENR 4

35- The compulsory MET reporting station are:

- A) Zahedan, Esfehan, Uromiyeh
- B) Abadan, Birjand, Sabzevar
- C) Zahedan, Abadan, Esfehan
- D) Sabzevar, Abadan, Esfehan

36- METAR in Iran will be issued every:

- A) 1 h
- B) 30 minute
- C) A or B
- D) None

37- Which part of AIP contain VFR/IFR rules?

- A) ENR 3
- B) ENR 1
- C) AD 1
- D) GEN 4

38- Where can we find the information about flight plan?

- A) ENR 1
- B) ENR 3
- C) GEN 3
- D) GEN 2

39- How many SAR (search and rescue station) are specified in Iran?

- A) 6
- B) 8
- C) 9
- D) 10

40- Which part of AIP contain the information about interception procedures?

- A) ENR 1
- B) ENR 3
- C) GEN 3
- D) GEN 2.5

41- Which part of AIP contains the information about "unlawful interference"?

- A) ENR 1
- B) ENR 3
- C) GEN 3
- D) GEN 1

42- Which part of AIP contains the information about "airspace classification"?

- A) ENR 3
- B) ENR 1
- C) GEN 3
- D) GEN 1

43- How many airspaces are classified in Iran?

- A) 4
- B) 3
- C) 5
- D) 2

44- How many controlled airspaces are classified in Iran?

- A) 3
- B) 2
- C) 1
- D) 4

45- How many uncontrolled airspace(s) is (are) classified in Iran?

- A) 1
- B) 2
- C) 3
- D) 4

46- Which class of airspace in Iran are specified control airspace?

- A) B, C, D
- B) A, B, C, D
- C) A, C, D
- D) A, D

47- Which class of airspace(s) in Iran specified as uncontrolled airspace(s)?

- A) F, G
- B) F
- C) G
- D) E, F, G

48- What is the class of airspace outside AIRWAY, TMA and CTR within TEHRAN FIR?

- A) A
- B) C
- C) D
- D) G

49- What is the classification of Boushehr CTR?

- A) A
- B) D
- C) D, A
- D) C

50- What is the classification of Tehran TMA up to FL200?

- A) C
- B) A
- C) A, C
- D) D

51- What is the classification of Tabriz CTR above FL200?

- A) C
- B) A
- C) A , C
- D) D

52- Which part of AIP contains information about altimeter setting procedure?

- A) ENR 1
- B) BNR 3
- C) GEN 3
- D) GEN 1

53- In which chart you can find transition altitude?

- A) Instrument approach
- B) SID
- C) STAR
- D) All answers are correct

54- The QNH value shall transmit in within Tehran FIR.

- A) hPa
- B) MB
- C) Inch.Hg
- D) PSI

55- The reported QNH in Iran is valid up to

- A) 25 km
- B) 25 NM
- C) 30 NM
- D) 30 km

56- Minimum for cruising level in IRAN shall be determined by adding to the highest obstacle:

- A) 1000 ft. pressure error + 1500 ft. terrain clearance.
- B) 1500 ft. pressure error + 1500 ft. terrain clearance.
- C) 1500 ft. pressure error + 1000 ft. terrain clearance.
- D) 1000 ft. pressure error + 1000 ft. terrain clearance.

57- Within which control airspace in IRAN the VFR flight does not authorize to fly?

- A) Airway.
- B) TMA
- C) TMA above FL 200.
- D) TMA below FL 200.

58- Night in IRAN is:

- A) 15 min after sunrise up to 15 min before sunset.
- B) 15 min before sunset up to 15 min before sunrise.
- C) 15 min after sunset up to 15 min before sunrise.
- D) 15 min before sunset up to 15 min after sunrise.

59- For which type of operation, the repetitive flight plan may be filed?

- A) Controlled flight.
- B) VFR flight.
- C) IFR flight.
- D) All type of operation.

60- What is minimum visibility for operation as a special VFR in Iran?

- A) 3 KM.
- B) 1.5 KM.
- C) 2 KM.
- D) 5 KM.

61- What is the minimum prescribed ground visibility for VFR flight in IRAN?

- A) 5 KM.
- B) 8 KM.
- C) 2 KM.
- D) 1.5 KM.

62- The reported QNH is valid up to in Iran:

- A) CTR.
- B) 25 NM.
- C) 15 NM.
- D) TMA.

63- When the flight plan for IFR flight shall be suspended:

- A) 90 minutes in exceeds of estimated off - block time.
- B) 30 minutes in exceeds of estimated off - block time.
- C) 45 minutes in exceeds of estimated off - block time.
- D) 10 minutes in exceeds of estimated off - block time.

64- which sections are available in IRAN AIP?

- A) NOTAM, AGA, AIP
- B) GEN, AIP, NOTAM
- C) ENR, GEN, AD
- D) NOTAM, AIP, AIC

65- "AIC":

- A) NOTAM
- B) AIP supplement
- C) Aeronautical Information Circulars
- D) AIP check list

66- How many sections are available in GEN?

- A) 4
- B) 5
- C) 7
- D) 6

67- GEN 2 includes:

- A) National regulations and requirements.
- B) List of location of indicator.
- C) Checklists and summaries.
- D) Aerodrome charges.

68- GEN 2 includes:

- A) National regulations and requirements.
- B) Measuring system.
- C) Services.
- D) ATS route

69- GEN 2 includes:

- A) National regulations and requirements.
- B) Public holydays.
- C) Charges for Aerodromes/Heliports and Air Navigation Services.
- D) Search and rescue service.

70- ENR 0 includes:

- A) Table of contents to part 2.
- B) General rules and procedures.
- C) Checklists and summaries.
- D) IFR Rules

71- ENR 1 includes:

- A) Table of contents to part 2.
- B) General rules and procedures.
- C) Checklists and summaries.
- D) CTR information.

72- ENR 2 includes:

- A) Table of contents to part 2.
- B) General rules and procedures.
- C) FIR / UIR.
- D) Navigation warning Area

73- ENR 3 includes:

- A) ATS Routes.
- B) General rules and procedures.
- C) ATS airspace.
- D) Radio navigation aids

74- ENR 4 includes:

- A) Radio Navigation Aids/Systems.
- B) General rules and procedures.
- C) ATS airspace.
- D) Flight planning

75- ENR 5 includes:

- A) Radio Navigation Aids/Systems.
- B) Navigation Warnings.
- C) ATS airspace.
- D) Airspace classification

76- ENR 6 includes:

- A) Radio Navigation Aids/Systems.
- B) Navigation Warnings.
- C) En-route Charts.
- D) ATS route

77- AD 0 includes:

- A) Table of contents to part 3.
- B) Tables and codes.
- C) Aerodromes/Heliports and Air Navigation Services.
- D) Aerodrome charts

78- AD 1 includes:

- A) Table of contents to part 3.
- B) Tables and codes.
- C) Aerodromes/Heliports Introduction.
- D) Aerodrome charges

79- AD 2 includes:

- A) Table of contents to part 3.
- B) Aerodromes.
- C) Heliports.
- D) Aerodrome charges

80- AD 1.3 includes:

- A) Table of contents to part 3.
- B) Aerodromes.
- C) Index aerodromes and heliport.
- D) Aerodrome charts

81- What is the lateral limit of ATS ROUTE G482 between TABRIZ and PAPOK?

- A) 10 NM.
- B) 15 NM.
- C) 20 NM.
- D) 25 NM.

82- What is the distance between SAVEH and EGVEL on ATS route L124?

- A) 119.2 NM.
- B) 78.3 NM.
- C) 19.2 NM.
- D) 20.5 NM.

83- What is entry and Exit point on ATS route W4:

- A) DEHNAMAK and EGLUL.
- B) BUBUX and BOJNORD
- C) DEHNAMAK and BOJNORD.
- D) BUBUX and EGLUL

84- What is MOCA on ATS route T210:

- A) 12570 ft.
- B) 7100 ft.
- C) 10700 ft.
- D) 8100 ft.

85- On which ATS route(s) significant point "MAGRI" is (are) used?

- A) UR654.
- B) G208.
- C) W10.
- D) UL333.

86- How long is validity of SNOTAM?

- A) 1 hour.
- B) 6 hours
- C) 24 hours.
- D) 12 hours.

87- Which of the following meteorological watch office(s) can issue SIGMET?

- A) OIII.
- B) OIIE.
- C) OIFN.
- D) A and B are correct.

88- What is the aerodrome elevation of mashhad international airport?

- A) 3423 ft.
- B) 3266 ft.
- C) 3254 ft.
- D) 3662 ft.

89- When NOTAM N is issued?

- A) For canceling previous NOTAM.
- B) For replacing previous NOTAM.
- C) For publishing new NOTAM.
- D) For special NOTAM

90- When S NOTAM is issued?

- A) For canceling previous NOTAM.
- B) For snow, slush and icing condition in aerodrome.
- C) For publishing new NOTAM.
- D) For special NOTAM

91- What are Iranian airspaces?

- A) A, C, D, G.
- B) A, C, D.
- C) G.
- D) B, E, F.

92- What is Iranian controlled airspaces?

- A) A, C, D, G.
- B) A, C, D.
- C) G.
- D) B, C, D.

93- What is Iranian uncontrolled airspace(s)?

- A) A, C, D, G.
- B) A, C, D.
- C) G.
- D) F

94- In Iran, VFR flight is prohibited in:

- A) B airspace.
- B) A airspace.
- C) G airspace.
- D) E airspace.

95- Which airspaces are not available in Iran?

- A) A, C, D, G.
- B) B, E, F.
- C) A, B, E, F.
- D) C, E, F.

96- What is the ATS route classification outside TMA in Iran?

- A) A, C, D, G.
- B) B, E, F.
- C) D, A
- D) G.

97- Only one revision is acceptable within:

- A) 60 minute, before EOBT.
- B) 15 minute, after EOBT.
- C) 60 minute, after EOBT.
- D) 30 minute, after EOBT.

98- Issued start up clearance by ATC unit is valid up to ----- from the time of startup clearance.

- A) 10 to 15 minutes.
- B) 20 minutes.
- C) 15 minutes.
- D) 10 minutes.

99- If the pilot is not able to make start up by first clearance:

- A) May request another one during the validity of the flight plan.
- B) Can make two more requests.
- C) Is not allowing to request startup.
- D) Shall cancel the flight plan.

100- According to Iran AIP, flight plan is required for:

- A) VFR flight.
- B) IFR flight.
- C) IFR flight only.
- D) A & B.

101- Which Annex to the Chicago Convention covers dangerous goods carried in aircraft?

- A) ANNEX 15.
- B) ANNEX 16.
- C) ANNEX 17.
- D) ANNEX 18.

102- The ICAO document concerning the provision of the AIS is Annex ____ to the Convention on Civil Aviation.

- A) 9
- B) 15
- C) 7
- D) 16

103- Annex 17 to the Convention of Chicago covers:

- A) Security
- B) Operation of aircraft
- C) Facilitations
- D) Aerodromes

104- ICAO personnel licensing rules and regulations are contained in Annex _____ to the Chicago Convention.

- A) 17
- B) 9
- C) 14
- D) 1

105- A detailed description of the visual ground aids can be found in ICAO:

- A) Annex 14
- B) Annex 12
- C) Annex 3
- D) Annex 9

106- How is night defined in Iran AIP?

- A) The hours of darkness.
- B) From 30 minutes after sunset until 30 minutes after sunrise.
- C) The hours when the sun is below the horizon.
- D) The 15 minutes after sunset until 15 minutes before sunrise.

107- “A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation” is the definition of:

- A) NOTAM.
- B) Aeronautical Information Circular (AIC).
- C) Aeronautical Information Publication (AIP).
- D) Aeronautical Information Regulation and Control (AIRAC).

108- AIRAC is stand for:

- A) Aviation Information Regulation and Control.
- B) Aeronautical Information Regulation and Control.
- C) Aeronautical Information Rules and Control.
- D) Aviation Information Rules and Control.

109- What is AIRAC?

- A) A package of information including AIP, NOTAMS route briefings.
- B) A telecommunicated message of operational significance which has short notice.
- C) The main body of knowledge concerning a national aviation system.
- D) A means of amending operationally significant permanent information.

110- The information concerning charges for aerodromes/heliports and Air Navigation Services are on the following part of the AIP:

- A) AD
- B) GEN
- C) FAL
- D) RAC

111- In which section of AIP are contained information elements relating to prohibited, restricted and dangerous areas?

- A) GEN
- B) ENR
- C) AGA
- D) MAP

112- Which part is AIP Part 2?

- A) GEN
- B) ENR
- C) AGA
- D) AD

113- In which section of AIP are contained information elements relating to areas and/or routes for which meteorological service is provided?

- A) COM
- B) GEN
- C) MET
- D) RAC

114- The SIGMET service in the AIP is in the following part:

- A) GEN
- B) AGA
- C) ENR
- D) MET

115- The contents of Aeronautical Information Publication (AIP) are:

- A) GEN, ENR (en-route) and AD (aerodromes)
- B) GEN, AGA, COM, RAC, FAL, SAR, MET, MAP
- C) GEN, AGA, COM, ENR, FAL
- D) GEN, ENR, RAG, AD

116- A detailed description of lower ATS routes can be found in part ____ section ____ of the AIP.

- A) 2; ENR0
- B) 2; ENR3
- C) 3; AD0
- D) 3; AD2

117- Which part of AIP contain information about sporting activity area?

- A) ENR 1.
- B) GEN 2.
- C) ENR 5.
- D) AD 1.

118- In which chapter of the AIP can you find a list with "location indicators"?

- A) GEN
- B) AGA
- C) ENR
- D) AD

119- Fuel available at an aerodrome will be published in:

- A) AIP-GEN
- B) AIP-AD
- C) AIP-RAC
- D) AIP-ENR

120- Operationally significant changes to the AIP shall be published in accordance with ____ procedures and shall be clearly identified by the acronym ____.

- A) Aeronautical information circular; AIRAC
- B) Aeronautical information regulation and control; AIRAC
- C) Aeronautical information and control; NOTAM
- D) Aeronautical information publication; AIS

121- Aerodrome locators are published in:

- A) AIP-GEN
- B) AIP-ENR
- C) AIP-RAC
- D) AIP-AD

122- The temporary, Long-term modification (3 months or more) and the short-term extensive or graphical information are published as follows:

- A) AIP Amendments.
- B) Trigger NOTAM.
- C) AIP Supplements.
- D) NOTAM.

123- Temporary changes on specifications for AIP supplements of long duration and information of short duration which contains extensive text and/or graphics shall be published as AIP supplements. It is considered a long duration:

- A) Three months or longer.
- B) Two months or longer.
- C) One year or longer.
- D) Six months or longer.

124- An AIP shall consist of the following three parts:

- A) AGA, MET, GEN.
- B) SAR, ENR, AD.
- C) GEN, ENR, AD.
- D) AIS, AD, RTE.

125- The identification of each prohibited, restricted, danger and caution area shall be composed by:

- A) The nationality letters for the location indicators assigned to the state, followed by P, , D and C.
- B) The letters P (Prohibited), R (Restricted),D (Dangerous) and C (caution) for the area concerned and figures.
- C) The nationality letters for location indicators assigned to the state or territory, followed the letters P, D and C figures.
- D) The letters P (Prohibited), R (Restricted), D (Dangerous) and C (caution).

126- Name the chapter in the AIP where one can find a list of significant differences between national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures:

- A) GEN 1
- B) AD 1
- C) ENR4
- D) GEN 2

127- Detailed description of meteorological information provided at the aerodrome and an indication of which meteorological office is responsible, is in the following part of the AIP:

- A) RAC
- B) GEN
- C) MET
- D) AD

128- In which section of AIP are contained information elements relating to refueling facilities and limitations on refueling services?

- A) FAL
- B) GEN
- C) SAR
- D) AD

129- Each AIRAC AIP amendment page shall display:

- A) Page number and date of issue.
- B) Date of issue.
- C) The effective date.
- D) Color coding.

130- Which section of the AIP contains information relating to the provision of a Meteorological Service?

- A) ENR
- B) AD
- C) SUPP
- D) GEN

131- Danger, Prohibited and Restricted areas must be designated by:

- A) Country identifier, followed by P/D/R. followed by the identifier.
- B) Country identifier followed by P/D/R
- C) P/D/R followed by the identifier.
- D) Country identifier followed by numbers.

132- According to AIP or ICAO Doc.8400 "UIR" is the abbreviation of:

- A) Upper Information Region
- B) Upper information Center
- C) Upper flight Information Region
- D) Upper Airway

133- What is the purpose of Ahwaz NDB?

- A) Aerodrome & Enroute
- B) Enroute
- C) Aerodrome
- D) Airway fan marker

134- What is the firefighting category of Ardabil airport?

- A) CAT 7
- B) CAT 8
- C) CAT 5
- D) CAT 6

135- All flights before entering Iran ADIZ (Tehran FIR) are required to contact the appropriate air defense radar station on or, at least 10 minutes prior to entering Tehran FIR.

- A) 121.500 MHz – 243.000 MHz
- B) 121.000 MHz – 243.000 MHz
- C) 127.000 MHz – 135.000 MHz
- D) 127.800 MHz – 135.100 MHz

136- What is the location name of “OIKM”?

- A) Kermanshah
- B) Kerman
- C) Kashan
- D) Bam

137- What is the time of sunrise in Abadan city on 3rd of January?

- A) 07:04
- B) 07:14
- C) 06:14
- D) 06:24

138- What is the radius of Tabriz CTR?

- A) 40 NM
- B) 5 NM
- C) 15 NM
- D) 45 NM

139- What is (are) fuel available in Kerman Airport?

- A) 100 LL
- B) Jet A1, 100LL, JP4
- C) Jet A1
- D) Jet A1, JP4

140- What is the vertical limit of Gorgan CTR?

- A) 6,000 ft.
- B) 15,500 ft.
- C) FL155
- D) B & C

141- What is the vertical limit of prohibited area OI- P5?

- A) 9500 ft. MSL
- B) 8500 ft. MSL
- C) 9000 ft. MSL
- D) 7500 ft. MSL

142- What is the transition altitude of Esfahan / Shahid Beheshti International Airport?

- A) 12,000 ft. MSL
- B) FL120
- C) 13,000 ft. MSL
- D) FL130

143- What is the upper vertical limit and radius of Tehran TMA?

- A) 8,500 ft. – 60 NM
- B) FL275 – 70 NM
- C) 8,500 ft. – 70 NM
- D) FL275 – 60 NM

144- What is the minimum flight altitude for entering Tehran FIR?

- A) FL150
- B) 10000 ft. MSL
- C) 16000 ft. MSL
- D) FL100

145- What is the ADIZ frequency?

- A) 127.800 MHz
- B) 135.100 MHz
- C) 118.400 MHz
- D) A & B

146- How long before entering Tehran FIR an aircraft shall report?

- A) At least 20 minutes
- B) At least 15 minutes
- C) At least 10 minutes
- D) At least 5 minutes

147- What is the time zone during winter period?

- A) 03:30
- B) 04:30
- C) 05:30
- D) 02:30

148- Where can we find runway obstacle free zone information?

- A) AD 2
- B) ENR
- C) GEN
- D) ED 1

149- Where can we find information about Restricted area?

- A) GEN 4
- B) ENR 5
- C) AD 1
- D) ERN 6

150- Who is responsible to provide AIP?

- A) STATE
- B) OPERATOR
- C) STATE OF OPERATOR
- D) ICAO

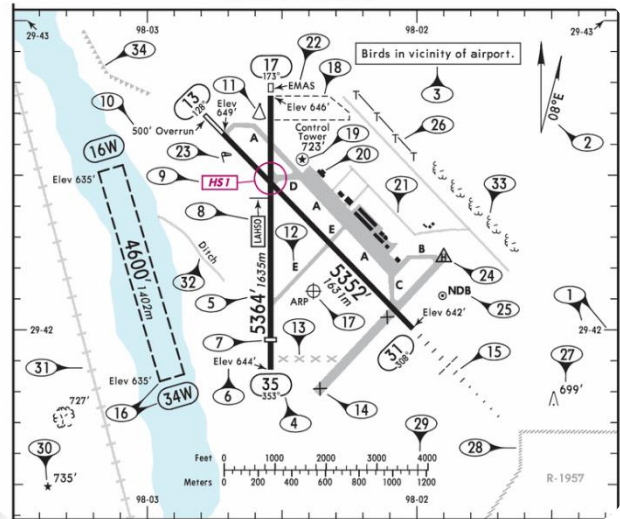
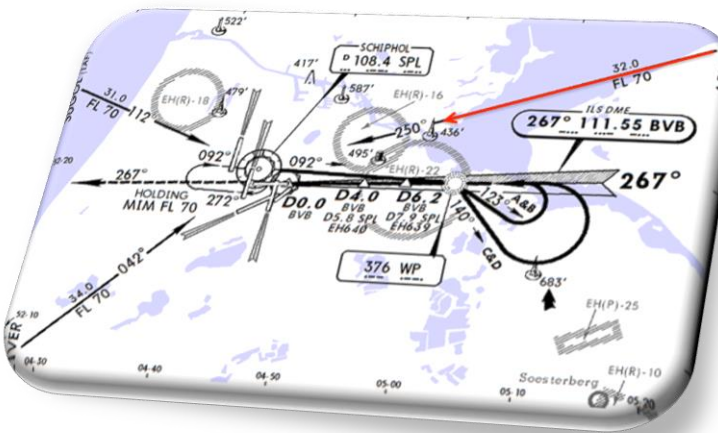
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	C	41	A	81	A	121	A
2	B	42	B	82	C	122	C
3	A	43	A	83	C	123	A
4	D	44	A	84	B	124	C
5	B	45	A	85	A	125	C
6	A	46	C	86	C	126	A
7	C	47	C	87	A	127	D
8	A	48	D	88	B	128	D
9	B	49	C	89	C	129	C
10	A	50	A	90	B	130	D
11	D	51	B	91	A	131	A
12	B	52	A	92	B	132	C
13	A	53	D	93	C	133	C
14	B	54	A	94	B	134	A
15	D	55	B	95	B	135	D
16	B	56	C	96	C	136	D
17	C	57	C	97	D	137	B
18	A	58	C	98	D	138	D
19	B	59	C	99	A	139	C
20	B	60	C	100	D	140	C
21	A	61	A	101	D	141	D
22	B	62	B	102	B	142	C
23	C	63	B	103	A	143	B
24	D	64	C	104	D	144	A
25	B	65	C	105	A	145	D
26	A	66	B	106	D	146	C
27	B	67	B	107	C	147	A
28	D	68	B	108	B	148	A
29	A	69	B	109	D	149	B
30	D	70	A	110	B	150	A
31	C	71	B	111	B		
32	D	72	C	112	B		
33	A	73	A	113	B		
34	C	74	A	114	A		
35	B	75	B	115	A		
36	C	76	C	116	B		
37	B	77	A	117	C		
38	A	78	C	118	A		
39	C	79	B	119	B		
40	A	80	C	120	B		

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

AIRWAY MANUAL



1- Within which section of airway manual you can find ANKARA VOLMET frequency?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

2- What is the grid MORA between 33-34-degree N and 57-58degree E?

- A) 11000 Ft.
- B) 11600 Ft.
- C) 11900 Ft.
- D) 9300 Ft.

3- What is the frequency of sector "1" of Tehran control?

- A) 119.30
- B) 120.70
- C) 132.50
- D) A & C

4- Within which section of airway manual you can find range of navigation facility frequency?

- A) RADIO AID
- B) METEOROLOGY
- C) EMERGENCY
- D) ENROUTE

5- What is the meaning of an "X" along an airway structure?

- A) Mileage break
- B) turning point
- C) A or B
- D) A & B

6- Which of the following area may be shown on SID or STAR chart, when it is within 5 nm of route centerline even not referenced in SID or STAR source?

- A) P
- B) R
- C) C
- D) D

7- What is the meaning of O> on an airway?

- A) odd and even level will be used in opposite direction
- B) odd level is used in the direction of arrow
- C) odd level is used on one-way airway on the direction of arrow
- D) even level will be used in opposite direction

8- The high level enroute chart designed for ...

- A) FL 200
- B) above FL 200
- C) At and above FL 200
- D) below FL 200

9- What is the meaning of a waypoint placed within a circle on SID or STAR chart?

- A) Turning point
- B) fly over fix
- C) Fly by fix
- D) reporting point

10- If the STALL speed of an airplane with max mass and landing configuration over threshold is 126 kts what will be its category?

- A) A
- B) B
- C) C
- D) D

11- When the geographical co-ordination of the site of a navigation aid may be shown on an en-route chart?

- A) The facility used for high altitude
- B) the facility used for low altitude
- C) the facility used for VFR
- D) A & B are correct

12- How an area navigation airway may be identified on en-route chart?

- A) By adding "V" as a prefix on the route designator
- B) by adding "L" as a prefix on the route designator
- C) by adding "Y" instead of "R" as a prefix
- D) "Z" instead of "R" as a suffix

13- The “M” shown on an identification of a VOR on an en-route chart means this station is selected as?

- A) met reporting station by MET office
- B) met reporting station by ATS until
- C) met reporting station by VOLMET
- D) met reporting station by pilot

14- How the location of FAF may be identified on the plan view of approach chart?

- A) by written FAF
- B) by an asterisk
- C) by Maltese cross symbol
- D) no indication on plan view

15- What is the reference of “DH”?

- A) Aerodrome elevation
- B) threshold elevation
- C) Runway elevation
- D) elevation of “G. P” site

16- How many pairs of touchdown zone marking shall be provided on a runway with a total length of 2150 m?

- A) 2
- B) 3
- C) 4
- D) 5

17- Which suffix of route designator shall not be used in voice communication?

- A) F, G, Y OR Z
- B) A, B, Y OR Z
- C) K, U, OR G
- D) L, M, N OR P

18- The duration of a NOTAM may be indicated by:

- A) Ten figure of date-time group
- B) Perm
- C) EST if duration is uncertain
- D) All answers are correct

19- If the second and third letter of NOTAM code is not in NOTAM code and the subject of NOTAM is related to the runway, which of the following letter can be used?

- A) CO
- B) AD
- C) AG
- D) RC

20- What is the minimum climb gradient with all engine operation during departure if climb gradient is not specified on departure procedure?

- A) 152 FT./NM
- B) 200 FT./NM
- C) 250 FT./NM
- D) 300 FT./NM

21- What amount of wind will be consider to design SID?

- A) 20 kts
- B) 30 kts
- C) 10 kts
- D) 40 kts

22- What bank angle considers for constructing missed approach procedure?

- A) 25°
- B) 20°
- C) 15°
- D) 30°

23- How many entry procedures maybe applied for an Omni-directional holding?

- A) 1
- B) 3
- C) 2
- D) 4

24- What is the distance of buffer area of a holding?

- A) 5 km
- B) 3 km
- C) 3 nm
- D) 5 nm

25- How many phases have a missed approach procedure?

- A) 1
- B) 2
- C) 3
- D) 4

26- Within which section of airway manual you can find SHIRAZ AIRPORT chart?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

27- What is the max holding speed of jet airplane at FL 100 during normal condition according to second edition of PANS/OPS?

- A) 220 kts
- B) 210 kts
- C) 240 kts
- D) 265 kts

28- The noise abatement procedure is not to be initiated less than? (NADP 1 or 2)

- A) 1000 ft.
- B) 800 ft.
- C) 600 ft.
- D) 400 ft.

29- What is the height reference of MDH of circle-to-land?

- A) Threshold Elevation
- B) Elevation of site of NAV ADS
- C) Runway elevation
- D) Aerodrome elevation

30- Within which section of airway manual you can find SHIRAZ RADAR chart?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

31- VMC descend maybe authorized within airspace of:

- A) class ``D``
- B) class ``E``
- C) class ``G``
- D) class ``D`` and ``E``

32- What significant change of cross wind shall be transmitted to an airplane in the final approach?

- A) 4 kts
- B) 5 kts
- C) 3 kts
- D) 2 kts

33- When the cloud information shall be transmitted to arriving aircraft?

- A) Cloud below 5000 ft.
- B) cloud below minimum sector altitude
- C) ``A`` or ``B`` whichever is greater
- D) ``A`` or ``B`` whichever is lower

34- Within which section of airway manual you can find ANNEX 3 information?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

35- The 11 MPS is equal to..... FPM?

- A) 2155
- B) 2165
- C) 2175
- D) 2185

36- Within which ICAO region, the B-RNAV is implemented?

- A) Middle-east
- B) ASIA pacific
- C) Europe
- D) north ATLANTIC

37- What will be the required fire category where the airplane over-all length is 42 meters and fuselage width is 4.5 meters?

- A) 6
- B) 7
- C) 8
- D) 9

38- What minor overload, may be occasionally accepted for flexible pavements?

- A) max 10%
- B) max 3%
- C) max 5%
- D) none

39- How the operational hours of an aerodrome based on continuous operation maybe specified?

- A) O/R
- B) H 24
- C) PTO
- D) HX

40- Find the LCN of an airplane with single isolated wheel load of 45 Tone with tire pressure of 7 kg/cm?

- A) 86
- B) 88
- C) 90
- D) 92

41- Which section provide information about length of TODA for RUNWAY 10 of Birjand airport?

- A) AIRPORT DIRECTORY
- B) EMERGENCY
- C) INTRODUCTION
- D) ENROUTE

42- Which section provide information about fire category of Bushehr airport?

- A) AIRPORT DIRECTORY
- B) EMERGENCY
- C) INTRODUCTION
- D) ENROUTE

43- REF Shiraz instrument approach procedure (13-1) what is the max missed approach speed indicated on missed approach icon?

- A) 180
- B) 185
- C) 200
- D) 205

44- REF ChahBahar instrument approach procedure (13-1), the lowest level up to lead redial may an aircraft descend is?

- A) 390 Ft.
- B) FL 45.
- C) 3000 Ft.
- D) 1900 Ft.

45- REF Bahrain chart (13-3), if QNH is 1016 HPA, what is the QFE?

- A) 1016
- B) 1017
- C) 1018
- D) 1019

46- REF Dubai chart (12-1) what is the name of final approach fix?

- A) KUVON
- B) TOXOD
- C) VEDAG
- D) OSTIN

47- REF Imam Khomeini chart (21-7) what is the minimum level from VR for ILS interception?

- A) 6450
- B) 6410
- C) 6140
- D) 6448

48- REF Imam Khomeini chart (21-7), what is the max holding speed over KAZ?

- A) 220 kts
- B) 210 kts
- C) 230 kts
- D) 240 kts

49- REF Shiraz chart (10-1) R1, what minimum level do you expect between R 305 - R 310 within 8 NM?

- A) 7000
- B) 8000
- C) 8500
- D) 9000

50- REF Shiraz chart (10-3) H, what is the track range of KATIB 2c to reach to KATIB?

- A) 85
- B) 90
- C) 92
- D) 98

51- REF Shiraz chart (10-3) H, how many turning point/cross mileage are charted?

- A) 3
- B) 2
- C) 1
- D) none

52- REF Mehrabad aerodrome chart (10-9) A, what is the height of jet barrier (net barrier) in FT.?

- A) 10
- B) 12
- C) 14
- D) 16

53- REF Mehrabad aerodrome chart (10-9) A, what is the direction of traffic circuit of 11 L?

- A) right
- B) left.
- C) both
- D) none

54- REF Mehrabad aerodrome chart (10-9) A, what is the distance of arrester gear (hock barrier) in meters from runway 29 L?

- A) 598
- B) 972
- C) 197
- D) 792

55- REF Mehrabad aerodrome chart (10-9) A, what is the angle of PAPI for RUNWAY 11R?

- A) 3.3
- B) 3.36
- C) 3.22
- D) 3.26

56- REF Mehrabad aerodrome chart (10-9) A, what is the minimum take-off visibility for departure, when runway lighting are on?

- A) 500
- B) 300
- C) 400
- D) 1200

57- REF Mehrabad aerodrome chart (10-9) A, what is the width of runway 29L?

- A) 60 m
- B) 40 m
- C) 50 m
- D) 45 m

58- REF Mehrabad chart (10-9), what is ASDA of RUNWAY 29 L?

- A) 13087
- B) 13507
- C) 13222
- D) 13622

59- REF Mehrabad chart (10-9), which runway elevation is airport elevation?

- A) 11R
- B) 11L
- C) 29L
- D) 29R

60- REF Mehrabad chart (10-9), how many helicopter landing PAD are charted?

- A) 4
- B) 1
- C) 3
- D) 2

61- REF Imam Khomeini chart (21-1), if the GND speed of an aircraft is 220 kts during missed approach what is the ROC/minute?

- A) 740
- B) 735
- C) 745
- D) 750

62- REF Imam Khomeini chart (21-1), what is the RVR of straight – in landing, when ALS out?

- A)1500
- B) 720
- C) 550
- D) 1200

63- REF Dubai chart (11-1) , what is DH minimum for cat III A for the operator using issues standard chart format ?

- A) 50
- B) 100
- C) 150
- D) 200

64- REF Dubai chart (11-1), what is the distance of FAF to ``0`` point?

- A) 5.2
- B) 7.3
- C) 6.8
- D) 6.4

65- REF Esfahan chart (11-1) what is minimum level when crossing lead radial?

- A) 7000
- B) 7500
- C) 6800
- D) none

66- Which edition of PANS-OPS has no acceleration portion for missed approach?

- A) first
- B) second
- C) third
- D) fourth

67- What is the maximum speed for cat B during turning departure?

- A) 120 kts
- B) 290 kts
- C) 165 kts
- D) 300 kts

68- What is the maximum rate of descent during final with no FAF for cat C?

- A) 590 ft./ min
- B) 655 ft./min
- C) 1000 ft./min
- D) 800 ft./min

69- What is the max speed during final for cat C?

- A) 100
- B) 160
- C) 185
- D) 130

70- Within which section of airway manual you can find radio failure procedure?

- A) EMERGENCY
- B) ENROUTE
- C) RADIO AID
- D) TERMINAL

71- What is the minimum holding level over ANARAK?

- A) FL 130
- B) FL 190
- C) FL 210
- D) FL 110

72-How many VOR/DME installed within Tehran TMA?

- A) 1
- B) 3
- C) 4
- D) 2

73- If a runway length is 12965 ft. what figure may be shown on location name?

- A) 130
- B) 129
- C) 129 ft.
- D) 130 ft.

74- What is the meaning of underline below the NAV aid identifier?

- A) part time
- B) on-request
- C) BFO required
- D) not co-located

75- Within which section of airway manual you can find intercepting procedure?

- A) RADIO AI
- B) EMERGENCY
- C) TERMINAL
- D) ENROUTE

76- What is the meaning of "G" as a suffix to the level indicated on an airway?

- A) MORA
- B) GPS MEA
- C) GRID MORA
- D) MOCA

77- Within which section of airway manual you can find ACN/PCN information?

- A) RADIO AID
- B) APT DIRECTORY
- C) TERMINAL
- D) ENROUTE

78- When the transponder shall be "off" or "standby" position?

- A) When the runway is vacated
- B) when aircraft arrived on aircraft stand
- C) after completing landing roll
- D) when entering taxiway

79- How a ghost VOR may be shown on an enroute chart?

- A) Within brackets
- B) remote site
- C) Within parentheses
- D) above NAV aid name

80- The two "T" symbol shown on the center line of a route on an airway chart mean?

- A) Change of MOCA
- B) change of MORA
- C) Change of MAA
- D) all answers are correct

81- For which enroute facility change-over-point may be established?

- A) VOR
- B) DME
- C) TACAN
- D) NDB

82- What is the meaning of an asterisk on a frequency?

- A) Operating all the time
- B) Operating part time
- C) Operating when requested
- D) Operating day time

83- What is the term of beginning of final approach segment of precision approach?

- A) FAP (USA)
- B) FAP (ICAO)
- C) FAF (USA)
- D) B & C are correct

84- The unboxed identification of navigation aid on a low and high altitude chart means:

- A) En-route facility
- B) Off airway facility
- C) Off chart facility
- D) VFR facility

85- How the MOCA may be shown on an enroute chart?

- A) by (A)
- B) by (g)
- C) by (T)
- D) by (D)

86- What is the meaning of shaded symbol on an en-route chart coverage diagram?

- A) main airport
- B) area chart coverage
- C) CTA
- D) TMA

87- The altitude of 5600` on a profile view of an approach chart means?

- A) maximum altitude
- B) mandatory altitude
- C) Minimum altitude
- D) recommended altitude

88- How the location of FAF may be identified on the profile view of approach chart?

- A) By Maltese cross symbol
- B) by an asterisk
- C) By the FAF
- D) all above maybe used

89- What is the meaning of letter (R) after the air traffic Service Unite?

- A) R NAV
- B) RNP
- C) Radar available
- D) Radio

90-What SSR code you may select when entering JADDEH FIR as an uncontrolled flight?

- A) 2000
- B) 4000
- C) 7000
- D) none

91- What is the meaning of "QNMAS" in NOTAM code?

- A) VOR is U/S
- B) DME is U/S
- C) VOR/DME is U/S
- D) ILS/DME is U/S

92- How much of the depth of wet snow is changed requires to issue new SNOWTAM?

- A) 10 mm
- B) 3 mm
- C) greater than 10 mm
- D) greater than 3 mm

93- What bank angle will be consider to design of a turning departure?

- A) 25°
- B) 20°
- C) 15°
- D) 10 °

94- What is the total time of flight technical tolerances for turning departure?

- A) 3 Sec
- B) 5 Sec
- C) 6 Sec
- D) 4 Sec

95- How many separate segments may have an instrument approach procedure?

- A) 3
- B) 4
- C) 5
- D) 6

96- What wind factor considers for constructing circling area?

- A) 10 kts
- B) 15 kts
- C) 20 kts
- D) 25 kts

97- What is the outbound time of a holding at 14000 FT.?

- A) 4 min
- B) 1 min
- C) 1.5 min
- D) 5 min

98- Within which section of airway manual you can find RNAV charts?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

99- At what level above aerodrome elevation the airplane may accelerate to enroute climb speed followed by noise procedures?

- A) 100 ft.
- B) 2000 ft.
- C) 3000 ft.
- D) 4000 ft.

100- Who is responsible to develop and implement standard operating procedures (SOPs) for aerodrome surface operation?

- A) aerodrome authority
- B) operator
- C) state
- D) ATS authority

101- Within which section of airway manual you can find runway LCN information?

- A) RADIO AID
- B) APT DIRECTORY
- C) TERMINAL
- D) ENROUTE

102- Within which section of airway manual you can find class of VDF antenna?

- A) RADIO AID
- B) METEOROLOGY
- C) TERMINAL
- D) ENROUTE

103- VMC climb clearance shall be provided for:

- A) 6000 ft.
- B) 8000 ft.
- C) 10,000 ft.
- D) all answers are correct

104- The latest information of what weather phenomena shall be reported in the final area:

- A) wind shear
- B) turbulence
- C) "A" and or "B"
- D) none

105- Who is responsible to decide, the suggested take-off direction if is not into the wind for the purpose of expediting?

- A) controller
- B) pilot
- C) operator
- D) all

106- Within which section of airway manual you can find search & rescue symbol?

- A) RADIO AID
- B) EMERGENCY
- C) TERMINAL
- D) ENROUTE

107- What is the pressure in inches when the pressure in HPA is 994?

- A) 29.23
- B) 29.26
- C) 29.35
- D) 29.41

108- What frequencies are provided for distress / emergency?

- A) 500 kHz
- B) 2182 kHz
- C) 8364 kHz
- D) all answers are correct

109- What MINOR over load, occasionally maybe accepted for unknown Pavements?

- A) max 3%
- B) max 5%
- C) max 10%
- D) max 8%

110- The "PCN" of Ahwaz is PCN 57/F/C/X/T, what is the type of pavement?

- A) FLEXIBLE
- B) RIGID
- C) UNKNOWN
- D) Asphalt

111- How the operational hours of an aerodrome based on irregular time maybe specified?

- A) O/T
- B) PPO
- C) HX
- D) HN

112- Which section contain instrument approach charts?

- A) RADIO AID
- B) GENERAL
- C) TERMINAL
- D) ENROUTE

113- Which section provide information about ATS route designator name?

- A) RADIO AID
- B) GENERAL
- C) TERMINAL
- D) ENROUTE

114- REF Shiraz instrument approach procedure (13-1) what is the max holding speed, in normal condition?

- A) 170 kt
- B) 230 kt
- C) 240 kt
- D) 250 kt

115- REF ChahBahar airport chart (13-1) what is the "ASDA" of runway 27 L?

- A) 9000 ft.
- B) 10181 ft.
- C) 9360 ft.
- D) 11743 ft.

116- REF Bahrain chart (13-3), what is the time of out band leg of holding?

- A) 4 min
- B) 1.5 min
- C) 1 min
- D) 5 min

117- REF Dubai chart (12-1) the [2.87] means?

- A) ILS glide slope
- B) VNAV
- C) MLS glide slope
- D) all answers are correct

118- REF Dubai chart (12-1) the numbers shown on the line of descend angle means?

- A) M/S
- B) FT./S
- C) FT./M
- D) M/M

119- REF Imam Khomeini chart (21-7) what is the missed approach holding level?

- A) 9000'
- B) 8000'
- C) 7000'
- D) 6000'

120- REF Imam Khomeini chart (21-7) what is the recommended altitude at 5 DME?

- A) 4850'
- B) 4848'
- C) 4840'
- D) 4830'

121- REF Shiraz (10-3E), what is track range to reach over KASOL based on KASOL 2C?

- A) 86
- B) 82
- C) 80
- D) 78

122- REF Shiraz chart (10-3E), if GND speed of departing aircraft is 234 kts how long does it take to reach to karam VIA karam 2D?

- A) 18 min
- B) 19 min
- C) 21 min
- D) 20 min

123- REF Imam Khomeini aerodrome chart (20-9), how many locations the RVR are installed?

- A) 1
- B) 2
- C) 3
- D) 4

124- REF Imam Khomeini aerodrome chart (20-9), which runway has the precision approach with side row?

- A) 29
- B) 11
- C) both
- D) none

125- REF Imam Khomeini aerodrome chart (20-9), what is distance between VOR and NDB?

- A) 1800 ft.
- B) 2000 ft.
- C) 2100 ft.
- D) 2200 ft.

126- REF Imam Khomeini aerodrome chart (20-9A), which runway equipped with touchdown zone lights?

- A) 29
- B) 11
- C) both
- D) none

127- REF Imam Khomeini aerodrome chart (20-9A), which lights may be operational for LVP take-off?

- A) runway
- B) runway center line
- C) "A" and "B"
- D) VASI

128- REF Imam Khomeini aerodrome chart (20-9A), what is the angle of PAPI of runway 29?

- A) 2.9
- B) 3
- C) 3.1
- D) 3.2

129- REF Imam Khomeini aerodrome chart (20-9A), what is the runway length (in FT.) when using ILS?

- A) 12801
- B) 13773
- C) 13005
- D) 12900

130- REF Esfahan aerodrome chart (11-1), How many wind indicator is installed on the aerodrome?

- A) 1
- B) 2
- C) 3
- D) 4

131- REF Esfahan aerodrome chart (11-1), what is true direction of runway 26 L?

- A) 075
- B) 255
- C) 258
- D) 078

132- REF Esfahan aerodrome chart (11-1), How many cross bar are shown on the approach light of runway 26 L?

- A) 5
- B) 4
- C) 3
- D) 2

133- REF Esfahan aerodrome chart (11-1), what is the length of 26 R (ASDA)?

- A) 15600
- B) 15607
- C) 15610
- D) 15617

134- REF Esfahan aerodrome chart (11-1), what is the distance of ILS glide slope antenna from threshold of RUNWAY 26 R?

- A) 1416 ft.
- B) 1426 ft.
- C) 1215 ft.
- D) 1216 ft.

135- REF Esfahan aerodrome chart (11-1), what is the width of runway?

- A) 48 M
- B) 45 M
- C) 50 M
- D) 52 M

136- REF Esfahan chart (11-1), How many initial approach fix are provided?

- A) 1
- B) 2
- C) 3
- D) 4

137- What is the maximum speed for cat C during turning departure?

- A) 265 kts
- B) 290 kts
- C) 120 kts
- D) 300 kts

138- What is the minimum rate of descend during final with no FAF for cat D?

- A) 590 ft./min
- B) 1000 ft./min
- C) 655 ft./min
- D) 750 ft./min

139- Within which part of airway manual you can find airport ICAO identifier code?

- A) ENROUTE
- B) APT DIRECTORY
- C) EMERGENCY
- D) METEOROLOGY

140- Within which part of airway manual you can find runway ASDA information?

- A) ENROUTE
- B) APT DIRECTORY
- C) EMERGENCY
- D) METEOROLOGY

141- Within which part of airway manual you can find METAR decoding information?

- A) ENROUTE
- B) APT DIRECTORY
- C) EMERGENCY
- D) METEOROLOGY

142- What is the meaning of VOR frequency in parentheses?

- A) route VOR
- B) off-route VOR
- C) Doppler VOR
- D) Ghost VOR

143- Within which part of airway manual you can find international distress frequency?

- A) EMERGENCY
- B) TABLE & CODE
- C) TERMINAL
- D) ENROUTE

144- Within which part of airway manual you can find NOTAM information?

- A) EMERGENCY
- B) TABLE & CODE
- C) TERMINAL
- D) ENROUTE

145- Within which part of airway manual you can find country dial number?

- A) EMERGENCY
- B) TABLE & CODE
- C) TERMINAL
- D) ENROUTE

146- What is the meaning of grid MORA following by +/-?

- A) Doubtful accuracy
- B) Doubtful clearance
- C) Doubtful position
- D) none

147- What is the meaning of (F) as a suffix when added after the basic designator of an ATS route?

- A) ATC is provided
- B) advisory service is provided
- C) Flight information is provided
- D) all ATS services are provided

148- How an uncontrolled airspace may be shown on an airway chart?

- A) White
- B) red
- C) tint
- D) yellow

149- Location name in blue means?

- A) Procedure are published
- B) VFR procedure are published
- C) IFR procedure are published
- D) controlled flight procedure are published

150- How database identifiers may be shown on STAR or SID charts?

- A) Within a closed box
- B) within brackets
- C) Within parentheses
- D) within a circle

151- Which instrument approach procedure on its profile view has the symbol of missed approach point?

- A) Precision approach
- B) circling approach
- C) Straight in approach
- D) non precision approach

152- The symbol ``V`` on a profile view of a non-precision approach means?

- A) visual approach point
- B) visual descend point
- C) minimum visual point
- D) none

153- What is the meaning of a small circle enclosing dot on an enroute chart H/L?

- A) Radio facility
- B) remote communication site
- C) Airport site
- D) navigation facility site

154- By which color the grid MORA may be shown?

- A) less than 10,000 ft. maroon, above 10,000 ft. green
- B) less than 10,000 ft. green , above 10,000 ft. maroon
- C) less than 10,000 ft. green , at and above 10,000 ft. maroon
- D) above 10,000 ft. maroon at and above 10,000 green

155- What is the meaning of letter (x) behind of a frequency on an approach chart?

- A) part time operation
- B) H24 operation
- C) operating at night
- D) on request

156- What is the meaning of ``full`` on the landing minima of approach chart?

- A) all facility are operating
- B) all parts of MLS are operating
- C) all component of ILS are operating
- D) all lights are operating

157- What is the meaning of the ``PANS OPS4`` margin notation?

- A) holding speed is based on edition 4 of PANS OPS
- B) acceleration segment is deleted
- C) noise procedure is not applicable
- D) ``A`` and ``B`` are correct.

158- What is the maximum interval distance of closed marking on a closed runway?

- A) 200 m
- B) 300 m
- C) 400 m
- D) 500 m

159- How the route designator of ``UL426F`` shall be used in voice communication?

- A) Uniform Lima 426 foxtrot
- B) upper Lima 426
- C) Uniform Lima 426
- D) upper Lima 426 foxtrot

160- How long is the maximum validity of SNOWTAM?

- A) 6 Hours
- B) 12 Hours
- C) 18 Hours
- D) 24 Hours

161- If turning altitude is not specified on SID what is the minimum level above the elevation of ``DER`` that the turn may be initiated by an airplane?

- A) 394 ft.
- B) 200 ft.
- C) 410 ft.
- D) 294 ft.

162- What is the maximum circling approach speed for category ``C`` airplane?

- A) 180 kts
- B) 290 kts
- C) 205 kts
- D) 225 kts

163- What is the rate of climb in minute of an airplane with the speed of 320 kts (600 KM/H) and gradient of 4 percent?

- A) 1400 ft.
- B) 1300 ft.
- C) 1500 ft.
- D) 1200 ft.

164- What is the optimum descend gradient on the final approach segment with FAF?

- A) 5.2%
- B) 6%
- C) 6.5%
- D) 4.5%

165- What is the zone of flexibility (in degree) for entering holding?

- A) 20
- B) 15
- C) 10
- D) 5

166- What is the reference of MDA for circling approach?

- A) runway elevation
- B) threshold elevation
- C) touchdown zone elevation
- D) MSL

167- What is the initial climbing speed to the noise abatement initiation point? (NADP 1 or 2)

- A) less than v_2+20 kts
- B) less than v_2+10 kts
- C) not less than v_2+20 kts
- D) not less than v_2+10 kts

168- When a pilot shall squawk indent?

- A) Requested by ATC
- B) requested by the operator
- C) Entering FIR
- D) entering area of SSR coverage

169- What is equivalent optimum descend gradient as degree in non-precision approach?

- A) 4.2
- B) 5.2
- C) 3
- D) 6.1

170- Clearance limit shall be described by:

- A) name of aerodrome
- B) significant point
- C) controlled airspace boundary
- D) all answers are correct

171- When SSR must be switch on?

- A) prior takeoff
- B) after takeoff
- C) after landing
- D) assign by ATSU

172- When an report aircraft entering TEHRAN FIR shall report its position for the purpose of military identification?

- A) 5 Minutes
- B) at least 10 minutes
- C) 10 minutes
- D) Any time

173- Which type of operation may execute visual approach?

- A) VFR
- B) IFR
- C) Controlled VFR
- D) controlled IFR

174- How can you identify GPS MEA change?

- A) by asterisk
- B) by crossbar
- C) by "T" symbol
- D) by "a" symbol

175- How can you classified aerodrome firefighting category?

- A) Overall fuselage length
- B) Fuselage width
- C) Wing tip to wing tip
- D) A&B are correct

176- The 50 km is equal to..... NM

- A) 27
- B) 26
- C) 25
- D) 24

177- Area navigation (RNAV) equipment may be used to determine the aircraft position are?

- A) VOR, DME, INS
- B) GNSS, loran ``C``
- C) VOR, GNSS
- D) NDB cannot support RNAV

178- How the operational hours of an aerodrome based on prior permission only may be specified?

- A) PPR
- B) PNR
- C) PPO
- D) PTO

179- where can we find tire pressure limitation for runway PCN?

- A) ENROUTE
- B) APT DIRECTORY
- C) TABLE & CODE
- D) TERMINAL

180- What minor overload, may be occasionally accepted on rigid pavement?

- A) MAX 10%
- B) MAX 5%
- C) MAX 5 tone
- D) MAX 10 tone

181- What is the value of temperature correction for each 10 (C) ISA deviation?

- A) 5%
- B) 3%
- C) 4%
- D) 2%

182- What is the NOTAM code "QMRLC"?

- A) runway active
- B) runway closed
- C) aerodrome active
- D) aerodrome closed

183- REF Shiraz instrument approach procedure (11-5) at what level above aerodrome, the acceleration will be applying?

- A) 3000 ft.
- B) 3100 ft.
- C) 3200 ft.
- D) none

184- REF ChahBahar airport chart (13-1), how far the ``VOR`` is located from ``ARP``?

- A) 3 km
- B) 2 km
- C) 3 nm
- D) 2 nm

185- REF Bahrain chart (13-3), what is the distance of intermediate fix from VOR?

- A) 7
- B) 4.8
- C) 12
- D) 10

186- REF Dubai chart (12-1), how many aircraft at the same time may hold over PINGO?

- A) 5
- B) 4
- C) 3
- D) 2

187- REF Imam Khomeini chart (21-7) what is the entry procedure of a missed approach aircraft for KAZ?

- A) Off set
- B) direct
- C) parallel
- D) ``A`` or ``C``

188- REF Imam Khomeini chart (21-7) what is the missed APP climb gradient (FT./ NM)?

- A) 152
- B) 170
- C) 200.5
- D) 210

189- REF Shiraz chart (10-3 H) what is the KATIB 2A track range?

- A) 81
- B) 85
- C) 73
- D) 89

190- REF Shiraz chart (10-3 H), what will be the minimum ROC/NM of departing aircraft to cross 15 DME at 10,000` based on airport elevation?

- A) 353
- B) 350
- C) 369
- D) 363

191- REF ESFAHAN aerodrome chart (11-1), which runway elevation is airport elevation?

- A) 26 R
- B) 26 L
- C) 08 L
- D) 08 R

192- REF ESFAHAN aerodrome chart (11-1), which runway is equipped with ILS?

- A) 08 R
- B) 08L
- C) 26 L
- D) 26 R

193- REF ESFAHAN aerodrome chart (11-1), what is the distance of runway lights from each other?

- A) 60 m
- B) 100 m
- C) 45 m
- D) 50 m

194- REF ESFAHAN aerodrome chart (11-1) the N 32 45.1 E 051 51.8 related to:

- A) VOR
- B) NDB
- C) ARP
- D) control tower

195- REF ESFAHAN aerodrome chart (11-1), how many cross bar has 29 L approach lights?

- A) 3
- B) 5
- C) 4
- D) 2

196- REF ESFAHAN aerodrome chart (11-1), and the VAR of 3 E what is the MAG track of runway 08L?

- A) 075
- B) 255
- C) 258
- D) 078

197- REF ESFAHAN aerodrome chart (11-1), what is TORA of RUNWAY 26L?

- A) 8694'
- B) 15610'
- C) 14426'
- D) 14246'

198- REF ESFAHAN aerodrome chart (11-1), what is ASDA of RUNWAY 08L?

- A) 15617'
- B) 14426'
- C) 15610'
- D) 14462'

199- REF ESFAHAN aerodrome chart (11-1), what is the TODA of RUNWAY 26L?

- A) 8694'
- B) 8858'
- C) 7008'
- D) none'

200- REF KHARK island aerodrome chart (10-9) what is the LDA of RUNWAY 32?

- A) 7657'
- B) 6345'
- C) 6332'
- D) 6232'

201- REF KHARK island aerodrome chart (10-9), for which category of aircraft, the take-off minima is not applicable?

- A) A
- B) B
- C) C
- D) D

202- REF KHARK island aerodrome chart (10-9), within which of the following area the KHARK aerodrome is located?

- A) P
- B) R
- C) D
- D) C

203- REF KHARK island aerodrome chart (10-9), what type of air traffic service are provided to aircraft?

- A) ATC
- B) advisory
- C) AFIS
- D) all

204- REF Esfahan chart (11-1), the missed approach icon indicated the turn of?

- A) less than 45
- B) straight
- C) 45
- D) more than 45

205- Which edition of PAS-OPS has no acceleration portion for departure?

- A) first
- B) second
- C) third
- D) fourth

206- The flight technical tolerance for turning departure is:

- A) 5 seconds
- B) 3 seconds
- C) 6 seconds
- D) 10 seconds

207- What is the maximum initial approach speed for CAT C?

- A) 120 kts
- B) 240 kts
- C) 160 kts
- D) 290 kts

208- What is the max initial approach speed for cat B during base turn?

- A) 150 kts
- B) 180 kts
- C) 140 kts
- D) 110 kts

209- What is the minimum MOC for the final of non-precision with FAF?

- A) 492 ft.
- B) 392 ft.
- C) 246 ft.
- D) 295 ft.

210- What is the minimum MOC for circling for cat B?

- A) 320
- B) 246
- C) 295
- D) 350

211-An MSA Provides:

- A) 300 m obstacle clearance within 46 km of the homing facility associated with the approach procedure for aerodrome.
- B) 300 ft. obstacle clearance within 46 km of the homing facility associated with the approach procedure for that aerodrome.
- C) 300 ft. obstacle clearance within 25 NM of the homing facility associated with the approach procedure for that aerodrome.
- D) 300 m obstacle clearance within 20 km of the homing facility associated with the approach procedure for that aerodrome.

212-The approach categories of aircraft are based upon:

- A) 1,3 times the stalling speed in clean configuration at maximum certified Landing Mass.
- B) 1,3 times the stalling speed in clean configuration at minimum certified Landing Mass.
- C) 1,3 times the stalling speed in the landing configuration at maximum certified Landing Mass.
- D) 1,3 times the stalling speed in the landing configuration at minimum certified Landing Mass.

213-Normally a procedure will be designed to provide protected airspace and obstacle clearance for aircraft up to and including:

- A) Category A.
- B) Category B.
- C) Category C.
- D) Category D.

214-For a non-precision approach the elevation of the relevant runway threshold is used for OCH reference if:

- A) the threshold elevation is more than 2 m below the aerodrome elevation.
- B) the threshold elevation is less than 2 m below the aerodrome elevation.
- C) the threshold elevation is more than 2 m above and below the aerodrome elevation.
- D) the threshold elevation is less than 2 m above and below the aerodrome elevation.

215-When constructing a turning missed approach the pilot reaction time taken into account is:

- A) 0 - 3 seconds.
- B) 0- 5 seconds.
- C) 3 - 5 seconds.
- D) 3-4 seconds.

216-The climb gradient of a missed approach can be reduced to:

- A) 2% if the necessary survey and safeguarding can be provided with the approval of the appropriate authority.
- B) 0,8% if the necessary survey and safeguarding can be provided with the approval of the appropriate authority.
- C) 1,5% if the necessary survey and safeguarding can be provided with the approval of the appropriate authority.
- D) 3,3% if the necessary survey and safeguarding can be provided with the approval of the appropriate authority.

217-If a turn of greater than 15° is required during a missed approach the turn is not allowed:

- A) until at least 50 ft. vertical clearance has been ensured.
- B) until at least 50 m vertical clearance has been ensured.
- C) until at least 100 ft. vertical clearance has been ensured.
- D) until at least 100 m vertical clearance has been ensured.

218- DME fix tolerance is:

- A) $\pm 0,46 \text{ km} + 0,25\%$ of the distance to the antenna.
- B) $\pm 0,46 \text{ km} + 1,25\%$ of the distance to the antenna.
- C) $\pm 0,46 \text{ km} + 1,5\%$ of the distance to the antenna.
- D) $\pm 0,46 \text{ km} + 2\%$ of the distance to the antenna.

219-Under which conditions may an aircraft on a straight-in-VOR approach continue it's descend below the OCA?

- A) When it seems possible to land.
- B) When the aircraft is in visual contact with the ground and with the runway lights in sight.
- C) When the aircraft has the control tower in sight.
- D) When the aircraft is in contact with the ground but not with the runway in sight yet.

220- Which is the obstacle clearance in the primary area of the intermediate approach segment in an instrument approach procedure?

- A) 150 m (492 ft.).
- B) 300 m (984 ft.).
- C) 450 m (1476 ft.).
- D) 600 m (1968 ft.).

221- During a standard arrival procedure under an IFR flight plan in VMC conditions in airspace class D, traffic avoidance is the responsibility of:

- A) the area controller.
- B) the pilot-in-command.
- C) the approach controller.
- D) the radar controller.

222- Minimum sector altitudes are established for each aerodrome and provide at least _ ft. obstacle clearance within _ NM of the homing facility associated with the approach procedure' at the aerodrome.

- A) 1000,25.
- B) 948,25.
- C) 300,46.
- D) 300,25.

223- In an approach procedure, a descent or climb conducted in a holding pattern is called:

- A) Base turn.
- B) Racetrack pattern.
- C) Procedure turn.
- D) Shuttle.

224- In case of a straight-in non-precision approach, the angle between the extended runway centerline and the final approach track is _ or less.

- A) 30°
- B) 20°
- C) 15°
- D) 10°

225-Which of the following would be regarded as "established" on the localizer of an ILS approach?

- A) Within 10° of the published track.
- B) Within 5° of the published track.
- C) Within half-scale deviation of the CD
- D) Not specified until the OM has been passed.

226-What is the minimum visibility for a circling approach for a Category B aircraft?

- A) 1.600 m
- B) 1.900 m
- C) 2.800 m
- D) 3.500 m

227-For a non-precision or circling approach, the Minimum Descent Height (MDH) cannot be lower than:

- A) 200 ft.
- B) the Obstacle Clearance Height (OCH).
- C) 350 ft.
- D) 400 ft.

228- On an instrument approach, what is the maximum permissible descent gradient in the final approach?

- A) 3°
- B) 5%
- C) 6,5%
- D) 4.5°

229- How can pilot descend below MDH on a VMC approach?

- A) threshold in view, able to keep visual reference to terrain, clear of cloud.
- B) clearance from ATC, threshold in view, inside areole dome traffic zone.
- C) runway visual, 5 km visibility and clear of cloud.
- D) visual glide path indication of "on glide path" and VMC exists.

230- Why is the descent gradient kept as low as possible in the intermediate approach segment?

- A) This is the segment in which speed and configuration are adjusted.
- B) It is not possible to guarantee full obstacle clearance in this segment.
- C) Usually track guidance is poor in this segment resulting in a requirement for a high MOC.
- D) Pilots cannot cope with track maintenance in a high rate of descent.

231-In a holding pattern all turns are to be made at a:

- A) rate of 3° per second.
- B) rate of 3° per second or at a bank angle of 25°, which ever requires the lesser bank.
- C) maximum bank angle of 25°.
- D) rate of 3° per second or at a bank angle of 20°, which ever requires the lesser bank.

232-Standard airway holding pattern below 14.000 ft.?

- A) Left. hand turns /1 minute outbound.
- B) Right hand turns /1,5 minutes outbound.
- C) Right hand turns /1 minute outbound.
- D) Left. hand turn /1,5 minutes outbound.

233-What is the deviation allowed either side of track between entry sectors when joining a hold?

- A) 5 degrees.
- B) 2,5 degrees.
- C) 100 degrees.
- D) 20 degrees.

234-Related to the three entry sectors in a holding pattern, there is a zone of flexibility on either side of the sectors boundaries of:

- A) 20 degrees.
- B) 15 degrees.
- C) 5 degrees.
- D) 10 degrees.

235-What is the minimum obstacle clearance guaranteed at the edge of the buffer area (5 NM outside of the holding area) of a holding pattern?

- A) 300 m (1.000 ft.) (2.000 ft. in mountainous areas).
- B) 150 m (500 ft.).
- C) 90 m (300 ft.).
- D) 0 m (0 ft.).

236-You are flying inbound on radial 232° towards VOR CDI. When you are required to hold overhead the VOR on radial 052, what type of entry will you perform?

- A) A direct entry.
- B) A parallel or offset entry.
- C) An offset entry.
- D) A reciprocal entry.

237-An expected approach time is Given:

- A) When an aircraft is instructed to hold.
- B) On all flights.
- C) Once an aircraft has been holding for 20 minutes.
- D) On request.

238-What is the outbound timing in a holding pattern below FL140 (no wind)?

- A) 1,5 minutes.
- B) 1 minute.
- C) 2 minutes.
- D) 1 minute or 2 minutes, depending on the actual IAS.

239-In a holding pattern, the pilot should attempt to maintain the _ by making allowance for wind by applying corrections to _ during entry and while flying the holding pattern.

- A) track; heading
- B) heading; time
- C) track; heading and time
- D) heading; track and time

240-You have received holding instructions for a radio fix. The published holding procedure is: "All turns to the right, 1 minute outbound, inbound MC 052". You are approaching the fix on an inbound magnetic track 232°. Select the available entry procedure:

- A) either "offset" or "parallel"
- B) offset
- C) parallel
- D) direct

241-In a standard holding pattern turns are made:

- A) in a direction depending on the entry.
- B) to the left.
- C) to the right.
- D) in a direction depending on the wind direction.

242- Unless otherwise published or instructed by ATC, all turns after initial offset entry into the holding pattern shall be made into which direction?

- A) Teardrop to the left. and then to the right.
- B) To the left.
- C) First right and then to the left.
- D) To the right.

243-What is the outbound timing in a holding pattern up to FL140?

- A) 30 seconds
- B) 2 minutes
- C) 1.5 minute
- D) 1 minute.

244- The maximum angle of bank to be used in a holding pattern is:

- A) 15°
- B) 25°
- C) 30°
- D) 35°

245- In a standard holding pattern with parallel entry first turn should be made:

- A) To the right.
- B) To the left.
- C) To the right except otherwise described by the appropriate authority.
- D) left. or right depending on the entry procedure

246- Which is the normal still air outbound time in a holding pattern?

- A) One and one half minute for altitudes above 14.000 ft.
- B) One and one half minute for altitudes above 10.000 ft.
- C) One minute for altitudes above 14.000 ft.
- D) None of the above is correct.

247-In relation to the three entry sectors, the entry into the holding pattern shall be according to:

- A) bearing
- B) Course
- C) heading
- D) track

248-In the hold at FL60, what is the normal holding speed for jet aircraft (PANS-OPS SECOND EDITION)?

- A) 170 kts
- B) 210 kts
- C) 230 kts
- D) 150 kts

249-You are flying towards a VOR on the 320° radial and have been told to hold on the 045° radial at FL60. What type of entry to the standard holding pattern is required?

- A) Direct.
- B) Parallel.
- C) Offset
- D) Either parallel or offset

250-When holding at FL 110, what is the normal out bound leg time?

- A) 30 seconds.
- B) 1 minute 30 seconds.
- C) 1 minute 15 seconds.
- D) 1 minute.

251-The minimum permissible holding level provides a clearance above the obstacles of at least _ in the holding area.

- A) 984 ft.
- B) 492 ft.
- C) 394 ft.
- D) 197 ft.

252- In a holding pattern, turns are to be made:

- A) at a bank angle of 20° or at a rate of 3° per second, whichever requires the lesser bank.
- B) at a bank angle of 15° or at a rate of 3° per second, whichever requires the lesser bank.
- C) at a bank angle of 30° or at a rate of 3° per second, whichever requires the lesser bank.
- D) at a bank angle of 25° or at a rate of 3° per second, whichever requires the lesser bank

253- Holding procedures: the still air time for flying the outbound heading should not exceed _ if above 14.000 ft.

- A) 1,5 minutes
- B) 2 minutes
- C) 2,5 minutes
- D) not specified

254- How far beyond the boundary of the holding area extends the buffer area?

- A) 3km
- B) 3 km
- C) 5km
- D) 5 NM

255- What obstacle clearance is guaranteed at a range of 5 NM from the edge of the holding area?

- A) 100 m
- B) 250 m
- C) 300 m
- D) Nil

256-What is the rate of turn/bank angle required for turns in a holding pattern?

- A) 30° bank angle maximum.
- B) 3° per second.
- C) 15° bank angle maximum.
- D) 5° per second.

257- The entry into a holding pattern shall be according to:

- A) magnetic heading in relation to the three entry sectors.
- B) magnetic track in relation to the three entry sectors.
- C) true heading in relation to the three entry sectors.
- D) true track in relation to the three entry sectors

258- You are required to carry out a teardrop entry into a holding pattern. Having reached the fix, the aircraft is turned onto a heading to make good a track making an angle of degrees from the reciprocal of the inbound track on the holding site.

- A) 20°
- B) 30°
- C) 45°
- D) 60°

259- In a standard holding pattern, all turns should be made:

- A) to the right at a bank angle of 25° or at a rate of 3° per second, whichever requires the lesser bank.
- B) to the left. at a bank angle of 25° or at a rate of 3° per second, whichever requires the lesser bank.
- C) the right at a bank angle of 25° or at a rate of 3° per second, whichever requires the highest bank.
- D) to the left. at a bank angle of 25° or at a rate of 3° per second, whichever requires the highest bank.

260-EAT is the time that an aircraft:

- A) is expected to join the holding pattern.
- B) is expected to leave the hold and commence its approach.
- C) is expected to land.
- D) is expected to cross the FAF to FAP

261-The outbound time in a holding pattern above 14.000 ft. in still air conditions is:

- A) 1 minute 30 seconds.
- B) 1 minute.
- C) 2 minutes.
- D) 2 minutes 30 seconds

262-The outbound time in a holding pattern at 14.000 ft. or below in still air conditions is:

- A) 2 minutes.
- B) 1 minute.
- C) 1,5 minutes.
- D) 30 seconds.

263-What is the longest period of time that can fly the 30⁰ leg of a teardrop procedure when joining a holding pattern?

- A) 1 minute 30 seconds
- B) 2 minutes 30 seconds.
- C) 3 minutes.
- D) 30 seconds

264-An aircraft is flying on heading 190⁰ (M) toward holding fix with inbound track 010⁰ (M) The correct entry type would be:

- A) Parallel or direct.
- B) Offset or direct.
- C) Parallel or offset.
- D) Reciprocal or direct.

265-Is the length of the outbound leg of a holding pattern always expressed in terms of time?

- A) Yes.
- B) No, where DME is used it may be specified in terms of distance.
- C) Yes, even where DME is used, the maximum length is always in time.
- D) No, where GS is less than 65 kts, the outbound leg must be at least 2 NM long.

266-Which of the following transponder codes is not a valid SSR mode A squawk?

- A) 0000
- B) 5678
- C) 7700
- D) 7777

267-When shall the QUAWK IDNT button be pushed by the pilot?

- A) After the setting of a different code has been requested by ATC.
- B) For test purposes if the pilot is in doubt of the correct functioning of the transponder.
- C) Only if requested by ATC.
- D) If the mode C equipment is unserviceable.

268-When the aircraft carries serviceable Mode C equipment, the pilot:

- A) Shall continuously operate this mode only when directed by ATC.
- B) Shall continuously operate this mode unless otherwise directed by ATC.
- C) Shall continuously operate this mode regardless of ATC instructions.
- D) Shall continuously operate this mode only when the aircraft is within controlled airspace.

269-Pilots shall not operate the SSR special position indicator (IDENT) feature unless:

- A) they operate within controlled airspace.
- B) requested by ATC.
- C) they operate a transponder with Mode C.
- D) they operate within non controlled airspace.

270-If an airplane cannot squawk IDENT, which of the following is a valid method by ATC can identify an airplane that is squawking mode A codes?

- A) Switch SSR to ON then STANDBY.
- B) Switch SSR from ON to OFF.
- C) Switch SSR to ON then STANDBY then ON again.
- D) Switch SSR to STANDBY then ON again.

271-What SSR squawk would you set in the absence of any specific code instruction from ATC, when flying in airspace where a radar service is available?

- A) 7000
- B) 1234
- C) 0000
- D) 2000

272-When the aircraft carries serviceable Mode C transponder, the pilot shall continuously operate this mode:

- A) Only when directed by ATC.
- B) Unless otherwise directed by ATC.
- C) Only when the aircraft is flying within controlled air- space.
- D) Regardless of ATC instructions.

273-when acknowledging mode/code setting instruction pilots shall:

- A) Read back the mode and code to be set.
- B) Read back only the code to be set.
- C) Use only the word WILCO
- D) Use only the word ROGER.

274-If the aircraft cannot squawk IDENT, what directions can ATS give to the pilot, without directing him to turn the aircraft?

- A) Switch to ON then STBY
- B) Switch to OFF.
- C) Switch to STBY then OFF.
- D) Switch to STBY then ON.

275-During a preflight a SSR transponder is found to be inoperative and immediate repair is not possible:

- A) a flight can be continued only to the destination airport.
- B) a flight to the closest airport, where a repair can be made is allowed.
- C) a flight cannot be made.
- D) it is necessary to specify this failure in the appropriate field of the flight plan.

276-The speed limitation for both IFR flights and VFR flights inside ATS airspace classified as B, when flying below 3.050 m (10.000 ft.) AMLS, is:

- A) 250 kts IAS.
- B) not applicable.
- C) 250 kts TAS.
- D) 260 kts IAS.

277-In the airway designator UA 1 Y, what does the prefix U mean?

- A) Uniform.
- B) Upper.
- C) Undesignated.
- D) Unidirectional.

278-Which of the following prefixes indicate an area navigation route which does not form part of the regional network of ATS routes?

- A) G
- B) M
- C) H
- D) Q

279-Which of the following approach speed ranges (V_{AT}) is applicable for Category B aircraft?

- A) 224 km/h to 261 km/h.
- B) 121 kts to 141 kts.
- C) 261 km/h to 307 km/h.
- D) 91 kts to 120 kts.

280-The ILS glide path is normally intercepted between:

- A) 5 and 10 NM.
- B) 3 and 7 NM.
- C) 4 and 8 NM.
- D) 3 and 10 NM.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	41	A	81	A	121	A
2	C	42	A	82	B	122	D
3	D	43	B	83	D	123	B
4	A	44	C	84	B	124	A
5	C	45	A	85	C	125	B
6	A	46	B	86	B	126	A
7	C	47	A	87	C	127	C
8	C	48	C	88	A	128	B
9	B	49	B	89	C	129	A
10	D	50	B	90	C	130	B
11	D	51	A	91	C	131	C
12	B	52	B	92	C	132	A
13	D	53	A	93	C	133	D
14	D	54	D	94	C	134	C
15	B	55	B	95	C	135	B
16	C	56	C	96	D	136	C
17	A	57	A	97	B	137	A
18	D	58	C	98	C	138	A
19	C	59	B	99	C	139	B
20	B	60	D	100	B	140	B
21	B	61	B	101	B	141	D
22	C	62	D	102	A	142	D
23	B	63	A	103	D	143	A
24	D	64	C	104	C	144	B
25	C	65	A	105	B	145	B
26	C	66	D	106	B	146	A
27	A	67	C	107	C	147	B
28	B	68	C	108	D	148	C
29	D	69	B	109	B	149	C
30	C	70	A	110	A	150	B
31	D	71	C	111	C	151	D
32	B	72	B	112	C	152	B
33	C	73	B	113	D	153	B
34	B	74	C	114	B	154	C
35	B	75	B	115	A	155	D
36	C	76	B	116	B	156	C
37	B	77	B	117	B	157	D
38	A	78	C	118	C	158	B
39	B	79	C	119	D	159	B
40	C	80	D	120	A	160	D

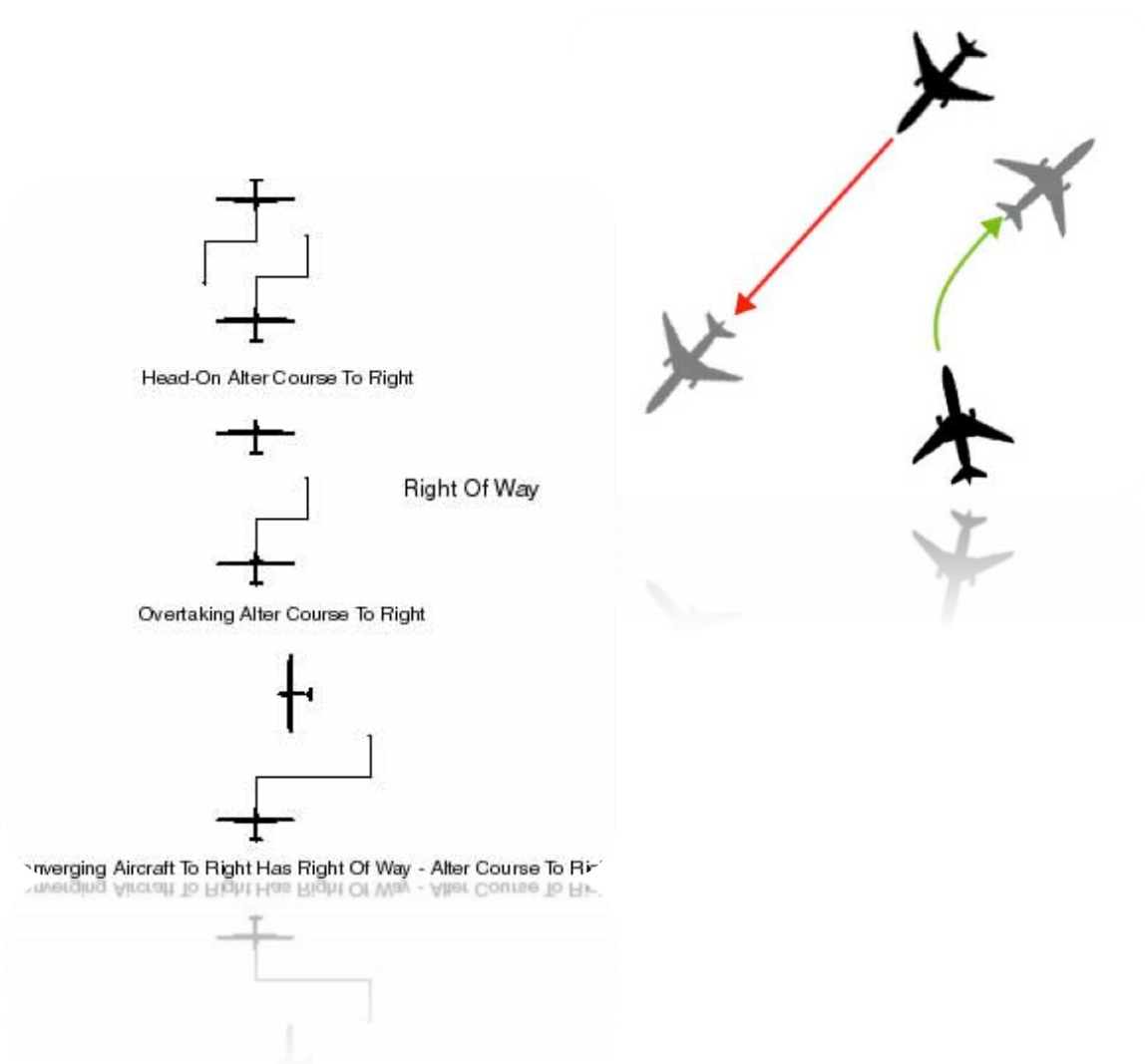
Question	Answer	Question	Answer	Question	Answer	Question	Answer
161	A	201	D	241	C		
162	A	202	B	242	D		
163	B	203	C	243	D		
164	A	204	D	244	B		
165	D	205	D	245	B		
166	D	206	C	246	A		
167	D	207	B	247	C		
168	A	208	C	248	B		
169	C	209	C	249	B		
170	D	210	C	250	D		
171	A	211	A	251	A		
172	B	212	C	252	D		
173	D	213	D	253	A		
174	B	214	A	254	D		
175	D	215	A	255	D		
176	A	216	A	256	B		
177	D	217	B	257	A		
178	C	218	B	258	B		
179	B	219	B	259	A		
180	B	220	A	260	B		
181	C	221	C	261	A		
182	B	222	A	262	B		
183	D	223	D	263	A		
184	D	224	A	264	C		
185	D	225	C	265	B		
186	D	226	C	266	B		
187	C	227	B	267	C		
188	C	228	C	268	B		
189	B	229	A	269	B		
190	D	230	A	270	C		
191	D	231	B	271	D		
192	D	232	C	272	B		
193	A	233	A	273	A		
194	C	234	C	274	D		
195	B	235	D	275	B		
196	A	236	B	276	B		
197	C	237	A	277	B		
198	C	238	B	278	D		
199	D	239	C	279	D		
200	C	240	A	280	D		

Flight Operation Officer Note

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Annex 2



1- For which type of operation, the advisory service may be provided?

- A) Controlled IFR
- B) SVFR
- C) CVFR
- D) IFR

2- What is the purpose of air traffic control service?

- A) Prevent collision between aircraft
- B) Expedite flow of traffic
- C) a and b
- D) a or b

3- How we can notify the pilot the limitation or irregularity of navigation and aerodrome facility?

- A) NOTAM
- B) Direct communication
- C) General call and broadcast
- D) All answers are correct

4- Maneuvering area is not to be used for the purpose of:

- A) Take-off
- B) Landing
- C) Taxing
- D) Loading passenger

5- The control area established at the confluence of ATS routes is:

- A) TMA
- B) CTR
- C) ATZ
- D) AWY

6- Airway is a control area in the form of:

- A) Corridor
- B) Area
- C) Arrival route
- D) Uncontrolled route

7- How many controlled airspaces are classified?

- A) 5
- B) 7
- C) 4
- D) 3

8- Within which class of controlled airspace an IFR is not subject to control?

- A) E
- B) C
- C) D
- D) All answers are incorrect

9- Air traffic advisory service is provided in:

- A) Control area
- B) Advisory area
- C) Advisory route
- D) B & C are correct

10- Based on what facility the ACAS operate:

- A) NAVAIDS
- B) SSR
- C) SSR transponder
- D) Communication

11- What is vertical position of an aircraft, if set 1013.2 HPA?

- A) FL
- B) Altitude
- C) Height
- D) None

12- What will be the level of aircraft below lowest usable F.L?

- A) Flight level
- B) Altitude
- C) Height
- D) None

13- What will be the level of an airplane at transition altitude?

- A) Altitude
- B) Flight level
- C) Height
- D) B and C

14- Who is the relevant authority for an aircraft operating over high seas?

- A) State of manufacture
- B) State of design
- C) State of registry
- D) State of operator

15- What are the elements of basic ADS?

- A) Aircraft identification and 4-dimension information
- B) Handling communication
- C) Useful for radio navigation
- D) Provide advice to the pilot

16- Which one of following statement is correct?

- A) Few means 1 to 2 oktas of sky
- B) Broken means 5 to 7 oktas of sky
- C) Overcast means 8 oktas of sky
- D) A & B & C are correct

17- Chang over point may be established on a route which is equipped with:

- A) DME
- B) NDB
- C) VOR
- D) ILS

18- Clearance limit are limited to:

- A) FIR boundary
- B) Controlled airspace boundary
- C) Destination
- D) All answers are correct

19- Repetitive flight plan is submitted by the:

- A) Pilot - in - command
- B) Operator
- C) Dispatcher
- D) All answers are correct

20- Within which airspace SVFR is authorized?

- A) ATZ
- B) TMA
- C) AWY
- D) CTR

21- What will be the minimum ceiling for VFR at a controlled aerodrome?

- A) 1000 '
- B) 1000 m
- C) 1500 m
- D) 1500'

22- What is minimum height of a VFR flight over congested area?

- A) 2000'
- B) 500'
- C) 100'
- D) 1000'

23- Who is responsible to establish minimum flight altitude?

- A) State
- B) Operator
- C) Pilot-in-command
- D) All answers are correct

24- Who is responsible for the operation of aircraft?

- A) Pilot-in-command
- B) Operator
- C) State
- D) A person who recognize by ATCU

25- Which navigation light of overtaken aircraft may not be seen at night?

- A) Port
- B) Starboard
- C) Rear
- D) A & B are correct

26- Which aircraft has right of way?

- A) Landing
- B) Taking off
- C) Emergency
- D) Urgency

27- What is the first action of pilots when two aircraft are approaching head-on on the ground?

- A) Alter its course to the left.
- B) Alter its course to the right
- C) Both aircraft shall stops
- D) Both aircraft alter heading to the right

28- What is the purpose of using navigation light?

- A) Indicate relative flight path
- B) Attract attention
- C) A and B
- D) A or B

29- What is the direction of turn in the vicinity of an aerodrome?

- A) Left.
- B) Right
- C) Depend to pilot decision
- D) Depends to wind direction

30- By which flight plan route the IFR flight shall proceed during radio failure?

- A) Flight plan
- B) Filed flight plan
- C) Current flight plan
- D) RPL

31- Within which class of airspace the VFR flight are not permitted?

- A) class B
- B) class A
- C) class C
- D) class D

32- Who is responsible to publish AIP:

- A) Operator
- B) State
- C) ICAO
- D) ATS authority

33- What is the purpose of ACAS?

- A) Provide advice to pilot
- B) Provide advice to ATC
- C) Provide weather information
- D) Receive information by ADS

34- What is the term of level above transition altitude?

- A) Altitude
- B) FL
- C) Height
- D) QNH

35- Who is the appropriate authority of an aircraft operating over a territory of a state?

- A) The state having sovereignty
- B) State of registry
- C) State of design
- D) State of manufacture

36- The lowest layer of clouds is called ceiling when it is:

- A) Below 6000 m
- B) Below 20000'
- C) Above 6000 m
- D) "A" or "B" are correct

37- Which portion of flight is called "significant portion" of flight?

- A) Cruise
- B) Climb
- C) Descend
- D) None

38- Which area shall not be established over the high seas?

- A) Prohibited area
- B) Restricted area
- C) Danger area
- D) A and B are correct

39- What is the minimum flight visibility for VFR at 12000 FT.?

- A) 5 km
- B) 8km
- C) 1500m
- D) 1000m

40- Above what flight level, the VFR flight are not authorized?

- A) 200
- B) 20000
- C) 290
- D) 29000

41- When may an IFR flight cancel its IFR flight?

- A) Ground in sight
- B) In VMC
- C) Uninterrupted ground in sight
- D) Uninterrupted VMC

42- An IFR flight shall not operate?

- A) Above MEA
- B) Above FL 200
- C) Below minimum flight altitude
- D) Along advisory route

43- Who are responsible to arrange a formation flight within uncontrolled airspace?

- A) Pilots -in-command
- B) Appropriate authority
- C) Air traffic controller
- D) None

44- What is the max lateral distance between aircraft in formation flight?

- A) 1NM
- B) 0.5 NM
- C) 1km
- D) B and C are correct

45- What is the max vertical separation of formation flight?

- A) 100 m
- B) 30 m
- C) 30' ft.
- D) None

46- The aircraft that has right of way shall maintain its:

- A) Heading
- B) Speed
- C) A or B
- D) A and B are correct

47- What action shall be taken by an overtaking aircraft on the ground?

- A) Stop
- B) Turn right
- C) Keep well clear
- D) All answers are correct

48- Which lights may be switched off during flight?

- A) Anti-collision lights
- B) Red anti-collision lights
- C) Any flashing lights
- D) Green flashing light

49- What variation in true airspeed that shall be reported to ATS unit, more than

- A) $\pm 15\%$
- B) 15 kts
- C) $\pm 5\%$
- D) ± 5 kts

50- Within how long after ETA or acknowledge expected approach time the radio failure aircraft must to be landed?

- A) Within 3 min
- B) Within 20 min
- C) Within 30 min
- D) Within 40 min

51- Who is the appropriate authority regarding flight over the high seas?

- A) State of operator
- B) State of registry
- C) State of occurrence
- D) State of territory being overflown

52- ADS stand for:

- A) Automatic direction specification
- B) Aerodrome data system.
- C) Aviation development service
- D) Automatic dependent surveillance

53- Acrobatic flight is a flight consist of manoeuvres performed by an aircraft involving abrupt changes in attitude or speed.....

- A) Intentionally
- B) Compulsory
- C) Automatically
- D) All answers are correct

54- Advisory route is....

- A) A designated route along which air traffic control service is available.
- B) A designated control zone within which air traffic advisory service is available.
- C) A designated route along which air traffic control and advisory service is available.
- D) A designate route along which air traffic advisory service is available.

55- Movement of helicopter/VTOL above the surface of an aerodrome is normally at a ground speed.....

- A) More than 20Kt
- B) 20Kt
- C) Less than 20Kt
- D) 37Km

56- Aeronautical information publication will be issued by:

- A) State
- B) Operator
- C) ATC unit
- D) Flight standard

57- ACAS operation is based on:

- A) Primary surveillance radar
- B) Secondary surveillance radar
- C) Pressure altitude
- D) Single side band

58- An airspace of defined dimension established around an aerodrome for the protection of aerodrome traffic is

- A) CTR
- B) ATZ
- C) CTA
- D) TMA

59-Manoeuvring area is consisting of:

- A) RUNWAY and TWY
- B) RUNWAY, TWY and apron
- C) RUNWAY, TWY and isolated parking
- D) All answers are correct

60- All aircraft in flight and operating on the maneuvering area of an aerodrome is:

- A) Controlled traffic
- B) Known traffic
- C) Aerodrome traffic
- D) Air traffic

61- Authorization for an aircraft to proceed under condition specified by air traffic control unit, is....

- A) ATC clearance
- B) Flight permission number
- C) Controlled clearance
- D) Flight clearance

62- How many airspaces are designated by ICAO?

- A) 7
- B) 5
- C) 6
- D) 4

63- Which one of the following airspaces is designated for Iran?

- A) A,C,D,G
- B) A,C,D,E,G
- C) A,B,D,F,G
- D) A,C,D,F

64- Airway is a control area established in the form of:

- A) Circle
- B) Rectangular
- C) Corridor
- D) Triangle

65- The vertical distance of an aircraft will be expressed in term of altitude, is on the basis of:

- A) QNE
- B) QFE
- C) QNH
- D) 1013.2 hPa

66- Altitude is measured from

- A) MSL
- B) AGL
- C) Aerodrome elevation
- D) All

67- The point to which an aircraft granted by air traffic control clearance, is

- A) Clearance limit
- B) Clearance expired
- C) Change over point
- D) Point of departure

68- Who are safety-sensitive personnel?

- A) Air traffic controllers
- B) Crew members
- C) Aircraft maintenance personnel
- D) All answers are correct

69- A controlled airspace extending upwards from surface of the earth is....

- A) Control area
- B) Control zone
- C) ATZ
- D) TMA

70- When altimeter setting sets on QNE, the vertical distance of aircraft will be expressed in.....

- A) Height
- B) Altitude
- C) Flight level
- D) Level

71- Radiotelephony is a form of radio communication in the form of

- A) Speech
- B) Signal
- C) Data link
- D) All answers are correct

72- SVFR is.....

- A) A VFR flight cleared by ATC within CTR below VMC.
- B) A controlled flight cleared by ATC within TMA below VMC.
- C) A VFR flight cleared by ATC within ATZ below VMC.
- D) A VFR flight cleared by ATC within CTZ below IMC.

73- Taxiing is movement of an aircraft on the surface of an aerodrome under its own power.....

- A) Including take-off
- B) Excluding take-off
- C) Excluding take-off and landing
- D) Including take-off and landing

74- Advice provided by ATC unit specifying maneuvers to assist a pilot to avoid a collision is....

- A) Traffic information
- B) Traffic resolution
- C) Traffic avoidance advice
- D) Resolution advisory

75- Who is the appropriate authority regarding the flight other than high seas?

- A) State of territory being overflown
- B) State of operator
- C) State of registry
- D) State of manufacture

76- What does CAVOK mean?

- A) Cloud and VMC is ok
- B) Ceiling and visibility ok
- C) No ceiling, visibility ok
- D) All answers are correct

77- By which reason, a pilot may depart from rules of the air or ATC clearance?

- A) In case of radio communication failure
- B) Economic
- C) Urgency
- D) Interest of safety

78- Which one of the following lights will indicate the aircraft flight path?

- A) Navigation light
- B) Anti-collision light
- C) Landing light
- D) None

79- In CAVOK the visibility should be

- A) 10 Km or more
- B) less than 10 Km
- C) 5 Km
- D) 8 Km

80-EOBT is the time.....

- A) At which the aircraft will commence taxi associated with departure
- B) At which the aircraft will request the start up
- C) At which the aircraft will enter the runway for take-off
- D) At which the aircraft will stop on runway holding position

81- The runway holding position will be 50M from runway edge if runway length is:

- A) Less than 900M
- B) More than 900M
- C) It depends on runway width
- D) It depends on runway lighting

82- An aircraft taxiing on the maneuvering area of an aerodrome shall stop and hold at

- A) All runway holding positions
- B) All runway marking
- C) All marking areas
- D) A and B are correct

83- Which one is not correct?

- A) An aircraft that is aware that another aircraft is approaching to land, shall give way to that aircraft
- B) An aircraft taxiing on maneuvering area of an aerodrome, shall give way to aircraft taking-off
- C) An aircraft in flight or operating on the ground shall give way to aircraft on final stage
- D) An aircraft with medium category shall give way to heavy category aircraft

84- Which one of the following manner decreases the safety of aircraft operation?

- A) Negligent
- B) Reckless
- C) Acrobatic
- D) All answers are correct

85- In formation flight, the vertical separation between leader and each formation flight shall not exceed

- A) 100ft.
- B) 200ft.
- C) 50ft.
- D) 150ft.

86-The actual time of leaving the holding fix for approach, depends on

- A) Estimated arrival time
- B) Expected approach time
- C) Approach clearance
- D) None

87- Who has the final authority for disposition of an aircraft?

- A) Pilot-in-command
- B) In-flight security
- C) Pilot
- D) Crew member

88- What information shall be study carefully by pilot-in-command before beginning a flight as pre-flight action?

- A) Current weather report
- B) Forecast
- C) Fuel requirement
- D) All answers are correct

89- Which one is considered as minima for VMC?

- A) Flight visibility 5Km / distance from cloud 1500ft. horizontally, 1000M vertically
- B) Flight visibility 5Km/ distance from cloud 1500M horizontally, 1000ft. vertically
- C) Flight visibility 5Km/ distance from cloud 1000M horizontally,1500ft. vertically
- D) Flight visibility 5Km / distance from cloud 1000ft. horizontally ,1500M vertically

90- Which lights of the preceding aircraft will be observed by the overtaking aircraft?

- A) Port
- B) Starboard
- C) Rear
- D) All answers are correct

91- Aerodrome traffic includes all traffic:

- A) on the movement area.
- B) on the maneuvering area of an aerodrome.
- C) flying in the vicinity of an aerodrome.
- D) Both B and C are correct.

92- Air traffic advisory service is provided within advisory airspace to ensure separation between:

- A) aircraft which are operating on IFR flight plans.
- B) aircraft which are operating on special VFR and VFR flight plans.
- C) aircraft which are operating on VFR and IFR flight plans.
- D) aircraft which are operating as special VFR.

93- is provided to notify appropriate organizations regarding aircraft in need of search and rescue air.

- A) Advisory service.
- B) Alerting service.
- C) Area control service.
- D) Surveillance service.

94- A controlled airspace extending upwards from a specified limit above the earth is called a:

- A) control zone.
- B) control area.
- C) control center.
- D) terminal control area.

95- A controlled airspace extending upwards from the surface to the specified limit is:

- A) terminal control area.
- B) control area
- C) control zone.
- D) control center.

96- The estimated time required from take-off to arrive over the destination aerodrome is called:

- A) the total estimated elapsed time.
- B) the estimated flight time.
- C) the estimated off-block time.
- D) the estimated en-route time.

97- is responsible for the operation of the aircraft in accordance with the rules of the air.

- A) The air traffic control unit.
- B) The pilot-in-command.
- C) The operation manager.
- D) The person manipulating the controls.

98- Who has the final authority as to the disposition of the aircraft while in command?

- A) The chief pilot.
- B) The flight operations department.
- C) The air traffic controller.
- D) The pilot-in-command.

99- What separation shall be maintained from the flight leader by each aircraft in a formation flight?

- A) A distance not exceeding 500 meters laterally and longitudinally and 30 meters vertically.
- B) A distance not exceeding 1000 meters laterally and longitudinally and 100 meters vertically.
- C) A distance not exceeding 0.5 NM laterally and longitudinally and 100 feet vertically.
- D) A distance of 1 km laterally and longitudinally and 30 feet vertically.

100- When two aircraft are approaching head-on or nearly so and there is a danger of collision, what action shall be take place by the pilots?

- A) Both aircraft shall alter their headings to the left..
- B) Both aircraft shall alter their headings to the right.
- C) Both aircraft must make a climbing turn to the left..
- D) Both aircraft must make a climbing turn to the right.

101- what action is required when two aircraft of the same category are converging at approximately the same level?

- A) Both aircraft must alter their headings to the right.
- B) The faster aircraft shall give way.
- C) The aircraft that has the other on its right shall give way.
- D) The aircraft that has the other on its left. shall give way.

102- which aircraft has the right-of-way when they are converging?

- A) airplane.
- B) Balloon.
- C) Glider.
- D) Airship.

103- Which converging aircraft has the right-of-way when they are converging?

- A) Aircraft towing another aircraft.
- B) Airship.
- C) Rotorcraft.
- D) Airplane.

104- An airplane and a glider are converging. The glider has the airplane on its right. Which aircraft has the right of way?

- A) Both should alter their headings to the right.
- B) The glider.
- C) The airplane.
- D) Both should alter their headings to the left.

105- Which of the following statements concerning the right-of-way is correct when two or more heavier-than-air aircraft are approaching an aerodrome for the purpose of landing?

- A) Aircraft at the lower level shall give way to the aircraft at the higher level.
- B) Aircraft at the higher level shall give way to the aircraft at the lower level.
- C) An aircraft on final approach shall give way to on aircraft on downwind leg.
- D) Towing aircraft has right of way than lower aircraft

106- Which lights must be displayed by all aircraft in flight between sunset and sunrise:

- A) Navigation lights and anti-collision lights.
- B) Anti-collision lights and landing lights
- C) Navigation lights and landing lights.
- D) Strobe light and landing light

107- Unless otherwise prescribed by the appropriate ATS authority, a flight plan for a flight to be provided with air traffic control service or air traffic advisory service shall be submitted:

- A) at least 15 minutes before departure.
- B) at least 30 minutes before departure.
- C) at least 60 minutes before departure.
- D) at least 90 minutes before departure.

108- You shall notify the appropriate air traffic services unit if the average true airspeed at cruising level between reporting points varies or is expected to be varies by:

- A) plus or minus 10 %.
- B) plus, or minus 15 %.
- C) 5 knots.
- D) plus, or minus 5%.

109- When operating under visual flight rules in class D airspace at altitudes above 10000 feet AMSL, you must maintain a vertical distance of at least from clouds.

- A) 1500 feet.
- B) 300 feet.
- C) 1000 feet.
- D) 1000 meters.

110- When flying under visual flight rules in class C airspace at altitudes below 10000 feet AMSL and above 3000 feet AMSL, or 1000 feet above terrain, whichever is the higher, you must maintain a horizontal distance of at least from clouds.

- A) 5 kilometers.
- B) 1500 meters.
- C) 1000 feet.
- D) 2000 feet.

111- To fly under VFR in class D airspace at or below 3000' AMSL, or 1000 feet above terrain, whichever is the higher, the flight visibility must be at least:

- A) 5 kilometers.
- B) 5 nautical miles.
- C) 8000 meters.
- D) 1500 meters.

112- To fly under VFR in class G airspace at and below 3000' feet AMSL or 1000 feet above terrain, whichever is the higher, you must:

- A) Maintain a horizontal distance of at least 1500 meters from clouds.
- B) Maintain a vertical distance of at least 1500 meters from the clouds.
- C) Maintain a horizontal distance of at least 1500 feet from clouds.
- D) Remain clear of clouds and insight of the surface.

113- To fly under VFR in class C airspace at and above 10000' feet AMSL, the flight visibility must be at least:

- A) 5000 meters.
- B) 8000 meters.
- C) 1500 meters.
- D) 3000 meters.

114- What is the required minimum distance from clouds for VFR flights in class G airspace at and above 10000 feet MSL?

- A) 1500 meters horizontally, and 300 feet vertically from clouds.
- B) 1500 feet vertically, and 1000 feet horizontally from clouds.
- C) Remain clear of clouds and insight of the surface.
- D) 1500 meters horizontally, and 1000 feet vertically from the clouds.

115- Except when a clearance is obtained from an air traffic control unit, no VFR flight may take-off or land at an aerodrome within a control zone, or enter the aerodrome traffic zone or traffic pattern when:

- A) the ceiling is less than 1000 ft., and the ground visibility is less than 3 km.
- B) the ceiling is less than 1500 ft., and the ground visibility is less than 5 statute miles.
- C) the ceiling is less than 1500 ft., and the ground visibility is less than 5 km.
- D) the ceiling is less than 450 ft., and the ground visibility is less than 5 km.

116- Unless authorized by the appropriate ATS authority, VFR flights shall not be operated:

- A) Above FL 200, at transonic and supersonic speeds.
- B) Above FL 200, at subsonic and transonic speeds.
- C) Above FL 180, at transonic and supersonic speeds.
- D) Above FL 290, at transonic and supersonic speeds.

117- You may not fly over any congested area of a city, town, or settlement at a height from which it would be impossible to land without undue hazard to persons or property on the surface in the event of an emergency arising, except:

- A) when necessary for take-off or landing.
- B) when trying to remain clear of clouds and in sight of surface.
- C) when you receive a logbook endorsement from your instructor.
- D) When you receive visual ground signal from tower

118- Except when taking off or landing, or except by permission from the appropriate authority, an aircraft may not fly over the congested areas of cities, towns, or settlements or over an open-air assembly of persons at a height less than above the highest obstacle.

- A) 300 feet.
- B) 1500 feet.
- C) 500 feet.
- D) 1000 feet.

119- Flight under SVFR is only permitted within:

- A) a Terminal Control Area.
- B) a Control Zone.
- C) an Aerodrome Traffic Zone.
- D) an ATS route.

120- A Control Area (CTA) normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes is known as:

- A) an Aerodrome traffic zone
- B) a Control Zone
- C) a Terminal Control Area
- D) an airway

121- When QNH is set on the altimeter, the vertical position of the aircraft is expressed in terms of:

- A) altitude.
- B) height.
- C) flight level.
- D) elevation.

122- The vertical position of the aircraft during climb is expressed in terms of until reaching the transition altitude.

- A) height.
- B) altitude.
- C) flight level.
- D) elevation.

123- When climbing through the transition altitude, the reference for the vertical position of the aircraft should be changed from to

- A) flight levels – altitudes.
- B) altitudes – height.
- C) altitudes – flight levels.
- D) transition layer – altitudes.

124- During the approach to land, you initiate your descent below transition level with the altimeter subscale set to:

- A) 1013.2 hPa.
- B) the QNH.
- C) the QFE.
- D) 29.82 in. Hg.

125- The vertical positioning of aircraft during approach shall be controlled by reference to until reaching the transition level below which vertical positioning is controlled by reference to

- A) flight levels – height.
- B) altitudes – flight levels.
- C) flight levels – altitudes.
- D) flight level – 1013.2 HPA

126- What is the minimum clearance of Iranian ATS routes above the highest obstacle within the area concerned?

- A) 2000ft.
- B) 1500ft.
- C) 1500M
- D) 2500ft.

127- Which signal shall be said by an aircraft when it has a very urgent message regarding an aircraft which is in fire?

- A) Mayday
- B) PANPAN
- C) XXX
- D) SOS

128- The radio failure aircraft in IMC shall continue its flight according to it's:

- A) Flight plan route
- B) Filed flight plan route
- C) Current flight plan route
- D) Operational flight plan

129- When an aircraft flying on an advisory route with magnetic track of 315 what shall be its assign flight level (non RVSM airspace)?

- A) 310
- B) 320
- C) 330
- D) 340

130- What will be the cruising level of an en-route flight, when it is flying below the lowest usable flight level:

- A) Altitude
- B) Height
- C) Flight level
- D) Elevation

131- Which of following aircraft on the final stage of landing, has the right of way?

- A) Emergency
- B) Lower
- C) Faster
- D) Nearer

132- Which light shall be displayed by an airplane for the purpose of indication of relative path?

- A) Anti-collision
- B) Landing
- C) Navigation
- D) Beacon

133- Who shall be permitted to switch off the any flashing light?

- A) Pilot-in-command
- B) Operator
- C) ATC
- D) None

134- When the revised estimated time shall be notified to ATS unit?

- A) It is found that the error of estimate time to be exceed 5 min
- B) It is found that the error of estimate to be exceed time 1 min
- C) It is found that the error of estimate to be exceed time 2 min
- D) It is found that the error of estimate to be exceed time 4 min

135- When an aircraft carrying out an instrument approach procedure and the pilot has aerodrome in sight and can maintain visual reference terrain, what shall he request?

- A) Visual approach
- B) VFR
- C) VMC descend
- D) Visual contact approach

136- Above what flight level IFR flight is compulsory?

- A) 30
- B) 90
- C) 10
- D) 200

137- The min vertical and horizontal distance from cloud for VFR flight within a controlled airspace in order is?

- A) 1500 ft., 1000 M
- B) 1500M, 1000M
- C) 1000ft., 1500M
- D) 1000ft., 1500ft.

138- Advisory service shall be provided in accordance with?

- A) Clearance
- B) Suggest and advise
- C) Traffic information
- D) B & C are correct

139- An aircraft is holding within transition layer, what shall be the term of its level?

- A) Flight level
- B) Height
- C) Altitude
- D) None

140- The actual time of leaving the holding fix depends on?

- A) EAT
- B) Approach clearance
- C) ETA
- D) TEET

141- How much of the sky shall be covered by cloud when you consider it, as ceiling?

- A) 1/2 sky
- B) 1/3 sky
- C) 2/3 sky
- D) 4/8 sky

142- When, an arriving aircraft following a delay, will leave initial approach fix?

- A) At "EAT"
- B) At "ETA"
- C) At "EAC"
- D) Depends on approach clearance

143- How can fly within restriction area?

- A) By permission
- B) By advise
- C) By arrangement
- D) None

144- What action shall be taken by an overtaking aircraft?

- A) Alter its heading to the left.
- B) Alter its level
- C) Alter its heading to the right
- D) Alter its speed

145- Which lights may be displayed, when there is no adequate illumination to indicate aircraft structure?

- A) Landing lights
- B) Navigation lights
- C) Anti-collision lights
- D) Strobe lights

146- How long before departure the flight plan shall be submitted?

- A) 60 min
- B) at least 60 min
- C) 30 min
- D) at least 30 min

147- To which flight plan shall an aircraft shall adhere itself?

- A) Current flight plan
- B) Operational flight plan
- C) Filed flight plan
- D) Repetitive flight plan 5

148- Who has the responsibility for operation of an aircraft in accordance with rules of the air?

- A) Operator
- B) A.T.C
- C) Pilot-in-command
- D) Pilot at flight control

149- The lowest flight level for VFR is:

- A) 200
- B) 35
- C) 45
- D) 50

150- What shall be the minimum height of, a VFR flight over an open air assembly of person?

- A) 500ft.
- B) 1000ft.
- C) 600 M.
- D) 1500ft.

151- When an IFR may cancel its IFR flight?

- A) It is in VMC
- B) Encountering VMC
- C) Uninterrupted VMC
- D) For a reasonable period in uninterrupted VMC

152- What signal shall be made by radio, when the aircraft is in distress?

- A) May day
- B) Pan
- C) XXX
- D) SOS

153- For which flight, the operator shall submit RPL?

- A) VFR
- B) Controlled flight
- C) IFR
- D) All answers are correct

154- Which temporary change relating to R.P.L may not to notify to ATS unit within 30 min before departure?

- A) Aircraft type
- B) Speed
- C) Route
- D) Level

155- What is the minimum height of VFR, over congested area?

- A) 500 ft.
- B) 1000 ft.
- C) 1500 ft.
- D) 2000 ft.

156- Aerodrome traffic means:

- A) All traffic on the landing area + all aircraft
- B) All traffic on the movement area + all aircraft in vicinity of an aerodrome
- C) All traffic on the maneuvering area
- D) All traffic on the maneuvering area + all aircraft in vicinity of an aerodrome

157- What is the minimum ceiling for a VFR at controlled accordance?

- A) 1000ft.
- B) 1500ft.
- C) 2000ft.
- D) 2500ft.

158- What is the next IFR, flight level above flight level 290, if magnetic track is 105 (RVSM airspace)?

- A) 300
- B) 310
- C) 320
- D) 330

159- What signal shall be used by an emergency aircraft on radio?

- A) SOS
- B) Emergency
- C) Distress
- D) May DAY

160- Which light fitted on aircraft may be switched-off by pilot?

- A) Navigation lights
- B) Flashing lights
- C) Strobe lights
- D) Landing

161- According to which of the following basis the advisory service shall not be provided?

- A) advice
- B) clearance
- C) suggest
- D) traffic information

162- Which signal may be initiated by, an intercepted aircraft which is in distress?

- A) Irregular flashing landing lights
- B) Irregular flashing navigation lights
- C) Regular flashing all lights
- D) Irregular flashing all available lights

163- What SSR code shall be selected by, a hijacked airplane?

- A) 7700
- B) 7600
- C) 7500
- D) 7400

164- At least how long before departure a controlled VFR flight shall submit a flight plan?

- A) 30 min
- B) 10 min
- C) 60 min
- D) 45 min

165- Under which condition the pilot-in-command of an aircraft may depart from rules of the air?

- A) VMC
- B) Interest of safety
- C) IMC
- D) Formation

166- Which of the following aircraft on the final stage of landing has the right of way?

- A) Lower airplane
- B) Faster airplane
- C) Glider
- D) Higher airplane

167- Ceiling is the base of lowest layer of cloud covering more than half of the sky below?

- A) 6000ft.
- B) 2000ft.
- C) 2000 M
- D) 20000ft.

168- When aircraft is running its engine on the movement area, shall display it's?

- A) Landing light
- B) Anti-collision light
- C) Position light
- D) Landing light

169- When an airplane and a balloon converging, which one has right of way:

- A) Balloon
- B) Airplane
- C) Right side aircraft
- D) Left. side aircraft

170- When an aircraft has an urgent message shall say?

- A) May day
- B) PANPAN
- C) XXX
- D) SOS

171- The first IFR FL above FL 290 on a 020 magnetic heading is (RVSM airspace)?

- A) 330
- B) 310
- C) 300
- D) 320

172- The first west bound FL above FL 280 is (RVSM airspace)?

- A) 300
- B) 320
- C) 290
- D) 310

173- The aircraft has the right of way shall maintain its

- A) Heading
- B) Speed
- C) level
- D) A & B are correct

174- When communication facility at an aerodrome is not available, arrival report shall be made?

- A) Before landing
- B) After landing
- C) 10 minutes after landing
- D) None

175- Which of the ICAO annexes talks about the rules of the air?

- A) Annex 8
- B) Annex 3
- C) Annex 2
- D) Annex 11

176- Advisory service will be provided in:

- A) flight information airspace
- B) Air traffic control airspace
- C) Advisory airspace
- D) None

177- Airborne collision avoiding system is based on:

- A) Primary surveillance radar
- B) Secondary surveillance radar
- C) Very high frequency
- D) Ultra high frequency

178- Cargo sling loads by helicopters require air taxiing in order to reduce ground effect turbulence with a height of:

- A) 25ft.
- B) Above 25 ft.
- C) Less than 25 ft.
- D) None

179- Authorization for an aircraft to proceed under condition specified by air traffic control unit is:

- A) Flight permission
- B) Authorized flight
- C) Controlled flight
- D) ATC clearance

180- Which one are the objectives of air traffic control service:

- A) Prevent collision between aircraft
- B) Prevent collision between aircraft and obstruction
- C) Expediting and maintaining an orderly flow of air traffic
- D) All answers are correct

181- How many of airspace classes are known as controlled airspaces?

- A) 5
- B) 2
- C) 4
- D) 3

182- What are the uncontrolled airspaces?

- A) F
- B) G
- C) D, E
- D) G, F

183- How many airspaces are assigned for Iran FIR?

- A) 7
- B) 3
- C) 5
- D) 4

184- Airway is a control area established in the form of:

- A) Corridor
- B) Rectangle
- C) Circle
- D) Triangle

185- Who is the appropriate authority regarding the flight over the high seas?

- A) State of territory being over flown
- B) State of registry
- C) State of operator
- D) State of manufacture

186- The estimated time at which the aircraft will commence movement associated with departure is:

- A) EOBT
- B) EET
- C) TEET
- D) ETA

187- Flight visibility is forward from:

- A) Cockpit of an aircraft on the ground
- B) Cockpit of an aircraft in flight
- C) RVR
- D) All answers are correct

188- IMC is a meteorological condition

- A) Equal to VMC
- B) Less than minima for VMC
- C) More than minima for VMC
- D) B and C are correct

189- Who is safety - sensitive personnel?

- A) Crew member
- B) Aircraft maintenance
- C) Air traffic controller
- D) All answers are correct

190- Runway- holding position is a designated position intended to

- A) Protect runway
- B) Protect an obstacle limitation surface
- C) Protect an ILS/MLS critical/sensitive area
- D) All answers are correct

191- Taxiing is a surface movement of an aircraft under its power.....

- A) Including take-off
- B) Excluding take-off
- C) Excluding take -off and landing
- D) All answers are correct

192- Traffic avoiding advice will be provided by:

- A) Operator
- B) Pilot-in-command
- C) ATS units
- D) flight dispatcher

193- What is the intent of traffic avoidance advice?

- A) To make large separation
- B) To sequence the traffic
- C) To apply priority
- D) To avoid a collision

194- The cruising level of an aircraft shall be in the term of flight level.....

- A) At lowest usable flight level
- B) Above lowest usable flight level
- C) At or above lowest usable flight level
- D) None

195- The cruising level of an aircraft shall be in the term of altitude:

- A) At lowest usable flight level
- B) Below the lowest usable flight level
- C) At or below transition altitude
- D) B and C are correct

196- The vertical distance between the formation flights shall not exceed from the leader.

- A) 100 m
- B) 100ft.
- C) 30ft.
- D) 50ft.

197- The aircraft that has the right of way shall maintain:

- A) Listening on watch
- B) The landing lights on
- C) Heading and speed
- D) It's transponder on

198- Which one is not correct?

- A) Emergency aircraft shall have priority to other aircraft
- B) Aircraft landing Shall have priority to departing aircraft
- C) The higher aircraft shall have priority to lower aircraft
- D) The urgency aircraft shall have priority to other aircraft

199- Anti-collision and navigation light shall be displayed on aircraft during.....

- A) Sunset to sunrise
- B) Sunrise to sunset
- C) Any other time prescribed by appropriate ATS authority
- D) a and c are correct

200- What is the basis of expressing time in aeronautical operations?

- A) UTC
- B) Local
- C) UTC and local
- D) GMT

201- The accuracy of time in data link communication is expected to be within?

- A) 1 second
- B) 5 second
- C) 30 second
- D) 10 second

202- The obtaining of time check shall be made:

- A) Prior to operating a controlled flight
- B) The other times during flight as may be necessary
- C) A and B are correct
- D) During night flight

203- An aircraft which is being subjected to unlawful interference, shall:

- A) Squawk 7600
- B) Squawk 7500
- C) Squawk 2000
- D) Squawk ATC assigned code

204- An aircraft experiencing radio communication failure shall squawk its transponder to

- A) 7700
- B) 7600
- C) 7500
- D) 7400

205- An intercepted aircraft shall set it's transponder to

- A) 7700
- B) 2000
- C) 7600
- D) 7400

206- Intercepting aircraft shall set its transponder to:

- A) 7600
- B) 2000
- C) 7500
- D) ATC assigned code

207- Which one is distress signal?

- A) MAYDAY
- B) PAN, PAN
- C) XXX in data link
- D) All answer are correct

208- Inadvertent changes consisting deviation of time estimate shall be reported to ATS units.

- A) \pm 5min
- B) In excess of 2 min
- C) \pm 1min
- D) Less than 2 min

209- The time check for controlled flight must be done?

- A) Before to operating
- B) At the commence of taxiing
- C) Before taking-off
- D) Any time

210- Which one is the urgency signal code?

- A) SOS
- B) PAN, PAN
- C) MAYDAY
- D) Parachute flare red light

211- Within which Iranian controlled airspace the VFR, is subject to control?

- A) Airway.
- B) T.M.A.
- C) C.T.R.
- D) "A &B &C" but not above FL 200.

212- Air traffic advisory service shall be provided between:

- A) All aircraft on advisory route.
- B) All aircraft on advisory route under IFR flight plan.
- C) All aircraft on controlled airspace.
- D) All aircraft on controlled area.

213- VFR flight is subject to control, when it is operating within:

- A) Control zone.
- B) Controlled airspace
- C) Airway.
- D) In class B,C,D

214- The position of an aircraft during descent within transition layer is:

- A) Altitude.
- B) Height.
- C) Flight level.
- D) Elevation.

215- Flight plane is specified information provided to:

- A) Operator.
- B) ATS units.
- C) ATC units.
- D) State.

216- Who has the final authority for disposition of aircraft?

- A) State.
- B) Pilot in command.
- C) Operator.
- D) Co-Pilot.

217- Aerodrome traffic means:

- A) All traffic on the landing area + all aircraft.
- B) All traffic on the movement area + all aircraft in the vicinity.
- C) All traffic on the maneuvering area.
- D) All traffic on the maneuvering area + all aircraft in the vicinity.

218- AIP is publication issued by the:

- A) State of operator.
- B) States or ICAO.
- C) State or by the authority of state.
- D) State of registry.

219- ETA for V.F.R flight is:

- A) Estimated to arrive A.T.Z.
- B) Estimated to arrive over aerodrome.
- C) Estimated to arrive C.T.R.
- D) Estimated to arrive over IAF

220- ETA for I.F.R flight without navigation aids is:

- A) Estimated to arrive over facility intended for departure.
- B) Estimated to arrive over facility intended for instrument approach procedure.
- C) Estimated to arrive over aerodrome.
- D) Estimated to arrive over initial approach fix

221- Which aircraft has the right of way when two Airplane and Glider are converging?

- A) Right side aircraft.
- B) Left. side aircraft.
- C) Airplane.
- D) Glider.

222- An aircraft is operating on or in vicinity of an aerodrome shall make all turns to the:

- A) Left.
- B) Left. unless instructed by ATC
- C) Right.
- D) Right unless otherwise instructed.

223- Flight plan submission during flight shall be made at least:

- A) 10 minutes before crossing airway or advisory rout.
- B) 10 minutes before entering control area or advisory area.
- C) 10 minutes prior departure.
- D) A and B are correct.

224- Variation in TAS shall be informed to ATS unit by pilot when:

- A) + Or - 20 KTS.
- B) 5 percent.
- C) + or - 5 percent.
- D) + or - 3 percent.

225- When arriving VFR aircraft entering Esfahan CTR and reported visibility is 3 km, it shall:

- A) Leave CTR.
- B) Return to departure point.
- C) Request SVFR.
- D) A or B are correct.

226- The ATS unit shall be informed, when the time estimated is exceeding:

- A) 1 min.
- B) 2 min.
- C) 3 min.
- D) 4 min.

227- When a controlled flight lost its radio in VMC shall:

- A) Continue VMC to destination.
- B) Continue VMC to land at nearest and suitable aerodrome.
- C) Report its arrival by expeditious means to ATC unit
- D) B & C are correct

228- Controlled radio failure aircraft in IMC may be landed within:

- A) 30 minutes after ETA.
- B) 30 minutes after acknowledge EAT.
- C) A and B whichever is later.
- D) A or B whichever is later.

229- An aircraft in emergency which requires immediate assistance, shall say:

- A) SOS.
- B) MAYDAY.
- C) PAN.
- D) XXX.

230- Emergency aircraft equipped with SSR code shall select:

- A) Codes 7500.
- B) Codes 7700.
- C) Codes 7600.
- D) Codes 7400.

231- Steady red signal to an aircraft on the ground means:

- A) Cleared to taxi.
- B) Cleared for take-off.
- C) STOP.
- D) Return for landing.

232- When an aircraft wishes to inform that a ship within sight is in fire shall say:

- A) SOS.
- B) MAYDAY.
- C) PANPAN
- D) XXX.

233- Cruising level is a level maintained during:

- A) Flight time.
- B) Flight duty time.
- C) Portion of flight.
- D) Take-off or landing.

234- Which annexes contains the standard and recommendation practices for licensed crewmembers?

- A) Annex 1.
- B) Annex 2.
- C) Annex 6.
- D) Annex 18.

235- When a controlled flight lost its radio in IMC shall:

- A) Proceed according to flight plan.
- B) Proceed according to current flight plan route
- C) Proceed according to flight plan operational flight plan.
- D) Proceed according to flight plan field flight plan.

236- Which SSR code shall be selected by a radio failure aircraft?

- A) 7700
- B) 7600
- C) 7500
- D) 7400

237- The minimum ceiling require for a VFR flight for takeoff from a controlled aerodrome is:

- A) 1500 m.
- B) 1500 ft.
- C) 1000 m.
- D) 1000 ft.

238- The cruising level of an aircraft below lowest usable flight level is called:

- A) Flight level.
- B) Altitude.
- C) Elevation.
- D) None.

239- What is the minimum safe altitude above the highest obstacle that must be maintained over congested areas?

- A) 500 ft.
- B) 1000 ft.
- C) 1500 ft.
- D) 2000 ft.

240- Under which condition an aircraft may be hold at a level within transition layer?

- A) When pilot set's Q.N.H.
- B) When pilot set's Q.F.E.
- C) When pilot set's Q.N.E.
- D) None.

241- Which of the following aircraft on the final stage of landing has the right of way?

- A) Lower aircraft.
- B) Faster aircraft.
- C) Glider.
- D) Higher aircraft.

242- Which of the following navigation Aid's shall not use on an airway?

- A) ILS.
- B) VOR.
- C) NDB.
- D) DME.

243- The elevation at highest obstacle on an airway is 7654 ft.. If magnetic track of mentioned route is 256, what is the lowest usable flight level based on IRAN criteria?

- A) FL 110.
- B) FL 120.
- C) FL 130.
- D) None.

244- Which of the following amount of cloud cover's the sky may be named as a ceiling?

- A) 1/2 sky.
- B) 5/8 sky.
- C) 4/8 sky.
- D) 3/7 sky.

245- According which ICAO annexes the flight crew members may be certified?

- A) Annex 6.
- B) Annex 11.
- C) Annex 2.
- D) Annex 1.

246- What is the next IFR flight level above flight level 290, if magnetic track is 105 (VSM)?

- A) 300
- B) 310
- C) 320
- D) 330

247- What signal shall be used by an emergency aircraft on radio?

- A) SOS.
- B) Emergency.
- C) Distress.
- D) Mayday

248- Which light fitted on aircraft may be switched off by pilot?

- A) Navigation lights.
- B) Any flashing lights.
- C) Strobe lights.
- D) Landing lights.

249- Under which circumstances the formation flight may take place?

- A) Clearance.
- B) Advise.
- C) Pre-arrangement.
- D) Information.

250- Which signal may be initiated by, an intercepted aircraft, which is in distress?

- A) Irregular flashing landing lights.
- B) Regularly flashing all lights
- C) Irregular flashing navigation lights
- D) Irregular flashing all available lights.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	D	41	D	81	B	121	A
2	C	42	C	82	A	122	B
3	D	43	A	83	B	123	C
4	D	44	D	84	D	124	B
5	A	45	B	85	A	125	C
6	A	46	D	86	C	126	D
7	A	47	C	87	A	127	B
8	D	48	C	88	D	128	C
9	D	49	C	89	B	129	A
10	C	50	C	90	C	130	A
11	A	51	B	91	D	131	A
12	B	52	D	92	A	132	C
13	A	53	A	93	B	133	A
14	C	54	D	94	B	134	C
15	A	55	C	95	C	135	A
16	D	56	A	96	A	136	D
17	C	57	B	97	B	137	C
18	D	58	B	98	D	138	D
19	B	59	A	99	C	139	D
20	D	60	C	100	B	140	B
21	D	61	A	101	C	141	C
22	D	62	A	102	B	142	A
23	A	63	A	103	A	143	A
24	A	64	C	104	B	144	C
25	D	65	C	105	B	145	B
26	C	66	A	106	A	146	B
27	C	67	A	107	C	147	A
28	A	68	D	108	D	148	C
29	A	69	B	109	C	149	B
30	C	70	C	110	B	150	B
31	B	71	A	111	A	151	D
32	B	72	A	112	D	152	A
33	A	73	C	113	B	153	C
34	B	74	C	114	D	154	D
35	A	75	A	115	C	155	B
36	D	76	B	116	A	156	D
37	A	77	D	117	A	157	B
38	D	78	A	118	D	158	B
39	B	79	A	119	B	159	D
40	A	80	A	120	C	160	B

Question	Answer	Question	Answer	Question	Answer	Question	Answer
161	B	191	C	221	D		
162	D	192	C	222	B		
163	C	193	D	223	D		
164	C	194	C	224	C		
165	B	195	D	225	C		
166	C	196	B	226	B		
167	D	197	C	227	D		
168	B	198	A	228	D		
169	A	199	D	229	B		
170	B	200	A	230	B		
171	B	201	A	231	C		
172	A	202	C	232	C		
173	D	203	B	233	C		
174	A	204	B	234	A		
175	C	205	A	235	B		
176	C	206	D	236	B		
177	B	207	A	237	B		
178	B	208	B	238	B		
179	D	209	A	239	B		
180	D	210	B	240	D		
181	A	211	D	241	C		
182	D	212	B	242	A		
183	D	213	D	243	B		
184	A	214	A	244	B		
185	B	215	B	245	D		
186	A	216	B	246	D		
187	B	217	D	247	D		
188	B	218	C	248	B		
189	D	219	B	249	C		
190	D	220	C	250	D		

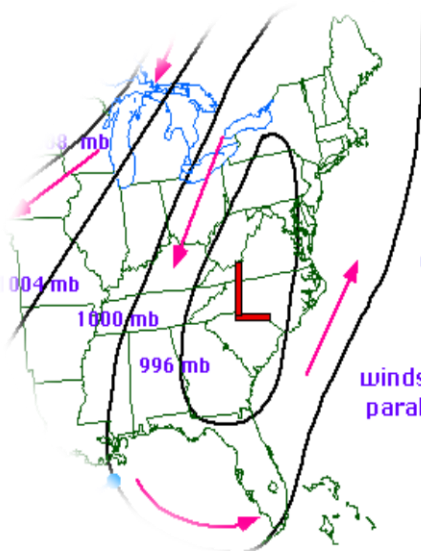
Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

Annex 3

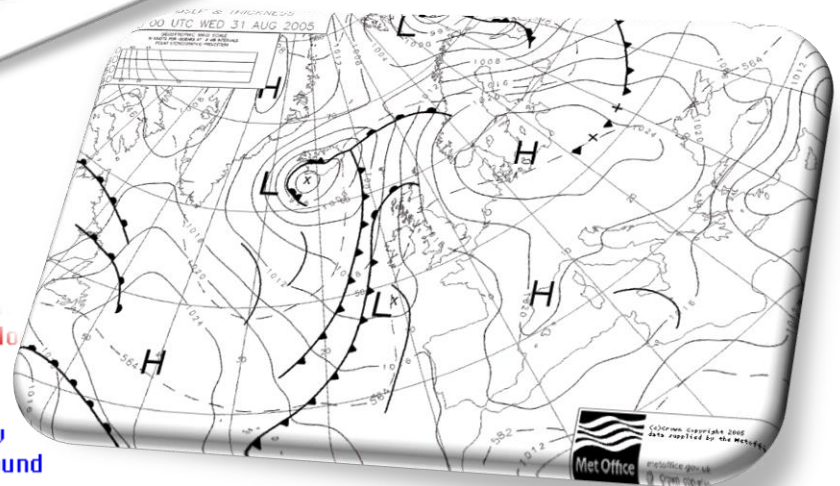
OIII 110700Z 15004KT 5000 HZ NSC 17/M04
Q1024 A3025 NOSIG



winds
counterclockwise
around low

winds flow
clockwise around
highs

winds flow roughly
parallel to isobars



1- What is the meaning of the expression "FEW"?

- A) 3 - 4 oktas of cloud cover.
- B) 1 - 2 oktas of cloud cover.
- C) 5 - 7 oktas of cloud cover.
- D) 0 - 1 oktas of cloud cover.

2- What is the meaning of the abbreviation "BKN"?

- A) 6 - 8 oktas.
- B) 3 - 4 oktas.
- C) 5 - 7 oktas.
- D) 8oktas.

3- The meaning of RVR is:

- A) cross-wind component.
- B) runway visual range.
- C) meteorological visibility.
- D) braking action.

4- What is the meaning of the abbreviation "SKC"?

- A) 0 okta cloud cover.
- B) 1 - 2 oktas cloud cover.
- C) 3 - 4 oktas cloud cover.
- D) abbreviation "SKC" is not associated with clouds.

5- What is the meaning of the abbreviation "OVC"?

- A) 0 oktas cloud cover.
- B) 3 - 4 oktas cloud cover.
- C) 5 - 7 oktas cloud cover.
- D) 8 oktas cloud cover.

6- Among the ten groups of clouds, the following two are mentioned specifically in meteorological reports and forecasts intended for aviation:

- A) Altocumulus and stratus.
- B) Cirrostratus and cumulonimbus.
- C) Cumulonimbus and towering cumulus.
- D) Cumulonimbus and nimbostratus.

7- What are the colors of stationary front is shown on a surface chart?

- A) Violet and red
- B) Blue and violet
- C) Red and blue
- D) Red and green

8- What is the color of warm front is shown on a surface chart?

- A) Red
- B) Green
- C) Blue
- D) Violet

9- Runway visual range can be reported in:

- A) a TAF.
- B) a METAR.
- C) a SIGMET.
- D) both a TAF and a METAR.

10- When will the surface wind in a METAR record as gust factor?

- A) When gusts are at least 10 knots above the mean wind speed.
- B) When gusts are at least 15 knots above the mean wind speed.
- C) With gusts of at least 25 knots.
- D) With gusts of at least 35 knots.

11- Which of the following weather reports could be, In accordance with the regulations, abbreviated to CAVOK?

- A) 29010KT 9999 SCT045TCU 16/12 Q1015 RESHRA NOSIG=
- B) 24009KT 6000 RA SCT010 OVC030 12/11 Q1007 TEMPO 4000 =
- C) 15003KT 9999 BKN100 17/11 01024 NOSIG =
- D) 04012G26KT 9999 BKN030 11/07 01024 NOSIG =

12- Which of the following phenomena should be described as precipitation at the time they are observed?

- A) TS
- B) SA
- C) DZ
- D) SQ

13- What does the abbreviation "NOSIG" mean?

- A) No significant changes.
- B) No report received.
- C) No weather related problems.
- D) Not signed by the meteorologist.

14- A SPECI is:

- A) An aviation routine weather report.
- B) An aviation selected special weather report.
- C) A warning for special weather phenomena.
- D) A forecast for special weather phenomena.

15- What does the term METAR signify?

- A) A METAR is a flight forecast, issued by the meteorological station several times daily.
- B) A METAR is a warning of dangerous meteorological conditions within a FIR.
- C) A METAR signifies the actual weather report at an aerodrome and is generally issued in half-hourly or hourly intervals.
- D) A METAR is a landing forecast added to the actual weather report as a brief prognostic report.

16- ATIS information contains:

- A) Operational information and if necessary meteorological information.
- B) Only meteorological information.
- C) Meteorological and operational information.
- D) Only operational information.

17- Refer to the following TAF for Zurich.

LSZH 061019 20018G30KT 9999 -RA SCT050 BKN080 TEMPO 1113 23012KT 6000 -DZ BKN015 BKN030 BECMG 1518 23020G35KT 4000 RA OVC010=

The lowest cloud base forecast for Zurich (ETA at 12:00 UTC) is:

- A) 1000 ft.
- B) 1500 ft.
- C) 1500 m
- D) 5000 ft.

18- How long from the time of observation is a TREND in a METAR valid?

- A) 9 hours
- B) 2 hours
- C) 1 hour
- D) 30 minutes

19- Which of the following phenomena should be described as precipitation at the time they are observed?

- A) +SHSN
- B) VA
- C) BR
- D) MIFG

20- Which of the following weather reports is a warning of conditions that could be potentially hazardous to aircraft in flight?

- A) SPECI
- B) ATIS
- C) SIGMET
- D) TAF

21- The wind direction in a METAR is measured relative to:

- A) Compass North.
- B) Magnetic North.
- C) True North.
- D) Grid North.

22- A METAR message is valid:

- A) At the time of observation.
- B) For 2 hours.
- C) For the hour following the observation.
- D) For 9 hours.

23- In a METAR message, abbreviations "BR" and "HZ" mean respectively:

- A) BR = mist, HZ = widespread dust.
- B) BR = fog, HZ = haze.
- C) BR = mist, HZ = smoke.
- D) BR = mist, HZ = haze.

24- In a METAR message, the wind group is 23010MPS. This means:

- A) Wind from 230° magnetic at 10 miles per hour.
- B) Wind from 230° true at 10 miles per hour.
- C) Wind from 230° magnetic at 20 knots.
- D) Wind from 230° true at 20 knots.

25- In the METAR code the abbreviation "VC" indicates:

- A) Volcanic ash.
- B) Present weather within the approach area.
- C) Present weather within a range of 8 km, but not at the airport.
- D) Present weather at the airport.

26- In the METAR code the abbreviation "VCBLDU" means:

- A) An active dust storm.
- B) Blowing dust in the vicinity.
- C) An active sandstorm.
- D) An active dust- and sandstorm.

27- The following weather message is a:

EDDM 241200Z 241322 VRB03KT 1500 BR OVC004 BECMG 1517 OOOO0KT 0500 FG VV002 TEMPO 2022 0400 FGVV001

- A) METAR.
- B) 24 hour TAF.
- C) SPECI.
- D) 9 hour TAF.

28- The term CAVOK is used when weather conditions are:

- A) 9999, CB, NOSIG.
- B) 9000, SKC, NOSIG.
- C) 8000, HAZARDOUS WX NIL, NOSIG.
- D) 9999. NSC, NSW.

29- What does the METAR code "R24R/P1500" mean?

- A) Snow clearance in progress on RUNWAY 24-Right, use runway length 1500 meters.
- B) RVR RUNWAY 24-Right is below 1500 meters.
- C) RVR RUNWAY 24-Right is above 1500 meters.
- D) RVR RUNWAY 24-Right is 1500 meters.

30- Which of the following is a landing forecast?

- A) METAR.
- B) TAF.
- C) SPECI.
- D) METAR with TREND.

31- What will be the effect on the reading of an altimeter of an aircraft parked on the ground as an active cold front is approaching and then passing?

- A) It will first increase then decrease.
- B) It will remain unchanged.
- C) It will first decrease then increase.
- D) It will fluctuate up and down by about ± 50 feet.

32- RVR is measured when meteorological visibility falls below:

- A) 500 m
- B) 1500 m
- C) 2000 m
- D) 2500 m

33- On an aerodrome, when a warm front is approaching:

- A) QFE increases and QNH decreases.
- B) QFE and QNH increase.
- C) QFE and QNH decrease.
- D) QFE decreases and QNH increases.

34- In which of these temperature bands is ice most likely to form on the aircraft's surface?

- A) -20°C to -35°C .
- B) $+10^{\circ}\text{C}$ to 0°C .
- C) 0°C to -10°C .
- D) -35°C to -50°C .

35- Which of the following conditions is most likely to cause airframe icing?

- A) PE
- B) GR
- C) SHSN
- D) +FZRA

36- The unit of pressure most commonly used in meteorology is:

- A) kg/cm²
- B) lbs/in²
- C) hPa
- D) tons/m²

37- At FL180, the air temperature is -35 °C. At this level density is:

- A) Unable to be determined without knowing the QNH.
- B) Greater than the density of the ISA atmosphere at FL180.
- C) Less than the density of the ISA atmosphere at FL180.
- D) Equal to the density of the ISA atmosphere at FL180.

38- An outside air temperature of -35°C is measured while cruising at FL200. What is the temperature deviation from the ISA at this level?

- A) 5 °C colder than ISA.
- B) 10 °C warmer than ISA.
- C) 5°C warmer than ISA.
- D) 10 °C colder than ISA

39- The lowest assumed temperature in the International Standard Atmosphere (ISA) is:

- A) -44,7°C
- B) -273 °C
- C) -56,5°C
- D) -100 °C

40- In the International Standard Atmosphere the decrease in temperature with height below 11 km is:

- A) 1 °C per 100 m.
- B) 0,65°C per 100 m.
- C) 0,5°C per 100 m.
- D) 0,6°C per 100 m.

41- If you are flying at FL100 in an air mass that is 10°C warmer than a standard atmosphere, what is the outside temperature likely to be?

- A) +15 °C
- B) +5 °C
- C) -10 °C
- D) -15 °C

42- The temperature at FL160 is -22°C and temperature at FL90 is based on the ICAO standard lapse rate, what is the difference temperature between them?

- A) -4°C
- B) -19 °C
- C) 0 °C
- D) +4 °C

43- The temperature at FL140 is -12 °C. What will the temperature be at FL 110 if the ICAO standard lapse rate is applied?

- A) -9 °C
- B) -18 °C
- C) -6 °C
- D) -15°C

44- The temperature at FL80 is +6 °C. What will the temperature be at FL130 if the ICAO standard lapse rate is applied?

- A) +2°C
- B) -6°C
- C) 0°C
- D) -4°C

45- The temperature at FL 110 is -5 °C. What will the temperature be at FL50 if the ICAO standard lapse rate is applied?

- A) -3 °C
- B) +3 °C
- C) 0 °C
- D) +7 °C

46- The 0° isotherm is forecast to be at FL50. At what FL would you expect a temperature of -6°C?

- A) FL110
- B) FL020
- C) FL100
- D) FL080

47- If Shiraz reports a wind of 300/12 kts on the METAR, what wind velocity would you expect to encounter at a height of 2.000 feet above the ground?

- A) 300/25 kts
- B) 230/30 kts
- C) 330/25 kts
- D) 270/20 kts

48- While flying at FL 120, you notice an OAT of -2°C. At which altitude do you expect the freezing level to be?

- A) FL110
- B) FL130
- C) FL150
- D) FL 90

49-When SPECI must be issued?

- A) Temperature increase 2°C or more
- B) Wind direction change 20° or more
- C) Wind speed change 5 knots or more
- D) Change in cloud base

50-When SPECI must be issued?

- A) Temperature increase 1°C
- B) Wind direction change 60° or more
- C) Wind speed change 5 knots or more
- D) Change in cloud base

51-When SPECI must be issued?

- A) Temperature increase 1°C
- B) Wind direction change 20 or more
- C) Wind speed change 10 knots or more
- D) Change in cloud base

52-When SPECI must be issued?

- A) Temperature increase 1°C
- B) Wind direction change 20° or more
- C) Wind speed change 5 knots or more
- D) Significant change in cloud base

53-When SPECI must be issued?

- A) Temperature increase 1°C
- B) Wind direction change 20° or more
- C) Wind speed change 5 knots or more
- D) Significant phenomena such as freezing PPTN or TS

54-What is the validity of TREND?

- A) 2 hours
- B) 3 hours
- C) 4 hours
- D) 5 hours

55- Wind direction for METAR is the average wind direction that receives within last....

- A) 10 minutes
- B) 15 minutes
- C) 30 minutes
- D) 60 minutes

56- The VARIABLE wind for wind direction is express when wind direction change within last 10 min before observing weather.

- A) 30° or more
- B) 45° or more
- C) 60° or more
- D) 50° or more

57- Which one of following statement is correct about variable wind direction?

- A) 240V260
- B) 240V270
- C) 240V290
- D) 240V310

58- How can you identify wind speed is calm in METAR?

- A) Ws is calm
- B) 00000
- C) CALM
- D) 11111

59- When the wind speed is variable?

- A) Wind speed is less than 5 knots
- B) Wind speed is less than 7 knots
- C) Wind speed is less than 3 knots
- D) Wind speed is less than 10 knots

60- "9999" in METAR is used when.....

- A) Visibility is 10 Km or more
- B) Visibility is 5 Km or more
- C) Visibility is 8 Km or more
- D) Visibility is 15 Km or more

61- What is the specification of CAVOK?

- A) Visibility is 10 Km or more.
- B) NO cloud below 5000 Ft.
- C) NO PPTN
- D) All answers are correct

62- What is the specification of CAVOK?

- A) Visibility is 10 Km or more.
- B) No significant cloud to restrict visibility less than 10 Km
- C) No CB
- D) All answers are correct

63- What is the specification of CAVOK?

- A) No CB
- B) No cloud below 5000 Ft.
- C) No PPTN
- D) All answers are correct

64- "R26L/P1200U" in METAR is shown the value of:

- A) Visibility
- B) RVR
- C) Ceiling
- D) Temperature

65- What is the "P" in RVR information that use for "R26L/P1200U"?

- A) RVR is more than 1200 Meters
- B) RVR is less than 1200 Meters
- C) RVR is no change but will be positive during next 10 minutes
- D) RVR is no change but will be positive during next 20 minutes

66- What is the "U" in RVR information that use for "R26L/P1200U"?

- A) Under
- B) Up
- C) No change
- D) Unlimited

67- What is the "N" in RVR information that use for "R26L/P1200N"?

- A) No change
- B) Down
- C) Up
- D) Negative

68- What is the limitation of visibility in Mist?

- A) Visibility more than 1000 m but less than 5000m
- B) Visibility more than 1000 m but less than 6000m
- C) Visibility more than 2000 m but less than 5000m
- D) Visibility more than 2000 m but less than 6000m

69- What is the limitation of visibility in Fog?

- A) Visibility more than 1000 m but less than 5000m
- B) Visibility more than 1000 m but less than 6000m
- C) Visibility more than 2000 m but less than 5000m
- D) Visibility is equal or less than 1000m

70- What is the limitation of visibility in DUST OR SAND?

- A) Visibility is less than 5000m
- B) Visibility more than 1000 m but less than 6000m
- C) Visibility more than 2000 m but less than 5000m
- D) Visibility is equal or less than 1000m

71- When does wind shear express in METAR?

- A) It occurs below 1500Ft. above aerodrome level
- B) It occurs below 1600Ft. above aerodrome level
- C) It occurs below 1700Ft. above aerodrome level
- D) It occurs below 1800Ft. above aerodrome level

72- Which of the following items are used in TREND?

- A) BECMG
- B) TEMPO
- C) FM
- D) A & B & C

73- How can you identify temporary nature change in TREND information?

- A) It follows by word "FROM"
- B) It follows by word "TEMPO"
- C) It follows by word "BECMG"
- D) It follows by word "AT"

74- Terminal area forecast is an aerodrome weather forecast that cover an area about:

- A) 3NM
- B) 5NM
- C) 10NM
- D) 15NM

75- What is the validity of TAF when it issues every 3 hours?

- A) Less than 9 hours
- B) Less than 12 hours
- C) Less than 24 hours
- D) Less than 30 hours

76- What is the validity of TAF when it issues every 6 hours?

- A) Less than 9 hours
- B) Less than 12 hours
- C) 12 hours or more
- D) Less than 30 hours

77- What is the maximum validity of AIRMET?

- A) 6 hours
- B) 12 hours
- C) 24 hours
- D) 30 hours

78- What is the validity of SIGMET?

- A) 4 hours
- B) 9 hours
- C) 24 hours
- D) 30 hours

79- Which type of information is available in VOLMET?

- A) METAR
- B) SPECI
- C) TAF
- D) All answers are correct

80- Refer to METAR "OIFM 152200Z 0000KT 0100 FG SCT035 BKN100 M02/M02 Q1011 A2986" what is the wind speed?

- A) Calm
- B) 10 KTS
- C) 20 KTS
- D) 30 KTS

81- Refer to METAR "OIFM 152200Z 0000KT 0100 FG SCT035 BKN100 M02/M02 Q1011 A2986" what is the horizontal visibility?

- A) 1,000m
- B) 100m
- C) 3,500m
- D) 2200m

82- Refer to METAR "OIFM 152200Z 0000KT 0100 FG SCT035 BKN100 M02/M02 Q1011 A2986" what is the dew point temperature?

- A) +2°c
- B) +5°c
- C) -2°c
- D) -5°c

83- Refer to METAR "OIII 151500Z 26010KT 0800 SN SCT035CB BKN100 00/M02 Q1015 A2988" what is the wind direction?

- A) 150°
- B) 100°
- C) 080°
- D) 260°

84- Refer to METAR "OIII 151500Z 26010KT 0800 SN SCT035CB BKN100 00/M02 Q1015 A2988" what is the height of ceiling?

- A) 1,000Ft.
- B) 100Ft.
- C) 3,500Ft.
- D) 10,000Ft.

85- Refer to METAR "OIII 151500Z 26010KT 0800 SN SCT035CB BKN100 00/M02 Q1015 A2988" what is the intensity of snow?

- A) Light
- B) moderate
- C) sever
- D) heavy

86- Which information is contained in an AIRMET?

- A) Severe icing
- B) Severe turbulence
- C) Sand storm
- D) Wind speed 30 KTS or more at surface

87- "AIRMET" contains information which are potentially hazardous to.....

- A) Small aircraft
- B) Large aircraft
- C) Heavy aircraft
- D) All aircraft

88- "SIGMET" are issued for hazardous weather which is considered significant to:

- A) Large aircraft
- B) Small aircraft
- C) Heavy aircraft
- D) All aircraft

89- Which information is contained in a SIGMET?

- A) Severe icing
- B) Severe turbulence
- C) Sand storm
- D) All answers are correct

90- In a SIGMET what does "EMBD TSGR" stand for?

- A) Severe icing
- B) Severe turbulence
- C) Sand storm
- D) Embedded thunderstorm with hail

91- In METAR what does the code "VCTS –SHRA" stand for?

- A) Severe icing
- B) Thunderstorm in vicinity and light rain showers
- C) Sand storm
- D) Embedded thunderstorm with hail

92- In METAR what does the code "BR" stand for?

- A) Severe icing
- B) Mist
- C) Sand storm
- D) Embedded thunderstorm with hail

93- In a forecast what does the code "GR" stand for?

- A) Severe icing
- B) Thunderstorm in vicinity and light rain showers
- C) Hail
- D) Embedded thunderstorm with hail

94- In a forecast what does the code "+TSSNGR" stand for?

- A) Severe icing
- B) Thunderstorm with heavy snow and hail
- C) Hail
- D) Embedded thunderstorm with hail

95- In a forecast what does the code "DZ" stand for?

- A) Severe icing
- B) Thunderstorm in vicinity and light rain showers
- C) Drizzle
- D) Embedded thunderstorm with hail

96- In a forecast what does the code "FU" stand for?

- A) Icing
- B) Thunderstorm in vicinity and light rain showers
- C) Hail
- D) Smoke

97- In a forecast what does the code "PL" stand for?

- A) Severe icing
- B) Thunderstorm in vicinity and light rain showers
- C) Hail
- D) Ice pellet

98- In a forecast what does the code "SG" stand for?

- A) Severe icing
- B) Snow grains
- C) Hail
- D) Embedded thunderstorm with hail

99- In a forecast what does the code "SQ" stand for?

- A) Severe icing
- B) Thunderstorm in vicinity and light rain showers
- C) Squall
- D) Embedded thunderstorm with hail

100- In a forecast what does the code "DS" stand for?

- A) Severe icing
- B) Dust storm
- C) Hail
- D) Embedded thunderstorm with hail

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	26	B	51	C	76	C
2	C	27	D	52	D	77	A
3	B	28	D	53	D	78	A
4	A	29	C	54	A	79	D
5	D	30	D	55	A	80	A
6	C	31	A	56	C	81	B
7	C	32	B	57	D	82	C
8	A	33	C	58	B	83	D
9	B	34	C	59	C	84	D
10	A	35	D	60	A	85	B
11	C	36	C	61	D	86	D
12	C	37	B	62	D	87	A
13	A	38	D	63	D	88	D
14	B	39	C	64	B	89	D
15	C	40	B	65	A	90	D
16	C	41	B	66	B	91	B
17	B	42	B	67	A	92	B
18	B	43	C	68	A	93	C
19	A	44	D	69	D	94	B
20	C	45	D	70	A	95	C
21	C	46	D	71	B	96	D
22	A	47	C	72	D	97	D
23	D	48	A	73	B	98	B
24	D	49	A	74	B	99	C
25	C	50	B	75	B	100	B

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

ANNEX 6



1- The aerodrome operating minima usually expressed in term of:

- A) Visibility and RVR and cloud condition
- B) Visibility or RVR and cloud condition
- C) Visibility or RVR and cloud condition and temperature
- D) Visibility and/or RVR and cloud condition and MDA/H or DA/H.

2- An airplane can be:

- A) Power driven
- B) Lighter than air
- C) Heavier than air
- D) A + C

3- Where the MDH is referenced to the threshold elevation?

- A) If that is more than 7 ft. below the AD elevation
- B) If that is less than 7 ft. below the AD elevation
- C) If that is more than 7 ft. above the AD elevation
- D) If that is less than 7 ft. above the AD elevation

4- Crew member is:

- A) A person assigned by state to duty on an aircraft
- B) A licensed member assigned by operator to act as a pilot-in-command
- C) A person assigned by Pilot-in-command
- D) A person assigned by an operator to duty on an aircraft during flight duty period

5- Flight crew member is:

- A) A licensed crew member on an airplane
- B) A licensed crew member on an aero plane during flight time
- C) A licensed crew member on an aircraft during flight duty period
- D) A licensed crew member on an aircraft

6- Cruising level is level maintained during:

- A) Flight time
- B) Flight duty period
- C) Significant portion of flight
- D) Take-off or landing

7- Decision altitude is a specified altitude in:

- A) Precision approach or Approach with vertical guidance (3D)
- B) Precision approach (3D)
- C) Non-precision approach (2D)
- D) Circling approach (2D)

8- Flight time is a synonymous with:

- A) Block to block
- B) Chock to chock
- C) a and b
- D) A or B

9- The procedures for carrying of dangerous goods are contained in:

- A) Annex 1
- B) Annex 6
- C) Annex 18
- D) Annex 17

10- Civil twilight means:

- A) Centre of sun's disc is 6 deg above horizon
- B) Centre of sun's disc is 15deg below horizon
- C) Centre of sun's disc is 6 deg below horizon
- D) Centre of sun's disc is 15 deg above horizon

11- MEL shall be approved by:

- A) State of manufacture
- B) State of Operator
- C) Operator
- D) State of design

12- An instrument approach and landing which utilize lateral guidance is known as:

- A) Precision APCH (3D)
- B) Non-precision APCH (2D)
- C) Circling APCH (2D)
- D) B + C

13- Duties of cabin crew member assigned by:

- A) Pilot-in-command
- B) Operator
- C) State of operator
- D) A or B

14- MMEL shall be approved by:

- A) State of design
- B) Operator
- C) State of operator
- D) State of manufacture

15- How many destination alternate aerodromes shall be selected when meteorological information is not available at destination aerodrome?

- A) One
- B) Two
- C) At least one
- D) At least two

16- An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it is not possible to use the aerodrome of departure is known as:

- A) En-route alternate aerodrome
- B) Destination alternate aerodrome
- C) Take-off alternate aerodrome
- D) ETOPS alternate aerodrome

17- The aerodrome from which a flight departs may also be used as:

- A) En-route alternate aerodrome
- B) Destination alternate aerodrome
- C) Take-off alternate aerodrome
- D) A or B

18- A list which identifies any external parts of an aircraft type which may be missing at the commencement of a flight is known as:

- A) MEL
- B) CDL
- C) MMEL
- D) Checklist

19- The acronym of an automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft is called:

- A) ELT (AP)
- B) ELT (AF)
- C) ELT (AD)
- D) ELT (S)

20- Which of ICAO Annexes shall be applicable to the operation of airplanes by operators authorized to conduct international commercial air transport operations?

- A) Annex 6 Part III
- B) Annex 6 Part II
- C) Annex 6 Part I
- D) Annex 8

21- A manual associated with the certification of airworthiness is:

- A) Operation manual
- B) Flight manual
- C) Air traffic manual
- D) A and B

22- MDA/H is specified altitude or height in:

- A) Circling approach procedure (2D)
- B) Precision approach procedure (3D)
- C) Non-precision approach procedures (2D)
- D) A or C

23- A person who engage in the control and supervision of flight operations, who supports, briefs and/or assists the pilot-in-command in the safe conduct of the flight is called:

- A) Pilot-in-command
- B) ATC
- C) Flight operations officer/flight dispatcher
- D) Co pilot

24- The operational control is responsibility of:

- A) Pilot-in-command
- B) operator
- C) State
- D) All

25- If the incident occurs and necessitates to report by Pilot-in-command it shall be made normally within.....:

- A) 10 days
- B) 90 days
- C) 1 month
- D) 3 months

26- Flight safety analysis program shall be established as part of safety management system by:

- A) State of operator
- B) Operator
- C) State
- D) State of registry

27- The method of control and operational supervision shall be approved:

- A) State of operator
- B) Operator
- C) State of registry
- D) State

28- If an emergency situation which endangers the safety of the airplane necessitates the taking of action which involves a violation of local regulations or procedures When pilot shall be notified to local authority?

- A) Within 10 days
- B) Within 5 days
- C) At termination of flight
- D) Without delay

29- A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, established for the aircraft type is known as:

- A) MMEL
- B) CDL
- C) MEL
- D) Checklist

30- CDL shall be approved by:

- A) State of manufacture
- B) Operator
- C) State of operator
- D) State of design

31- DH is a specified Height is referenced to:

- A) Aerodrome elevation
- B) Threshold elevation in the precision
- C) Runway elevation
- D) Threshold elevation in the non-precision

32- What is the lowest height in Precision approach at which missed approach must be initiated?

- A) MDH
- B) DH
- C) OCA
- D) DA

33- What is the lowest height as aerodrome operating minima for VOR/DME approach?

- A) MDH
- B) OCH
- C) DH
- D) TCH

34- Flight time is commenced from the moment an aircraft:

- A) First moves with own power
- B) First moves with push back system
- C) Moves with own power for the purpose of taking off
- D) First moves for the purpose of taking off

35- An aircraft means any machine:

- A) Power driven
- B) Heavier than air
- C) Lighter than air
- D) A + B + C are correct

36- The Maximum certificated take-off mass of large airplane is:

- A) Over 27000 kg
- B) Over 5700 kg
- C) Over 7000 kg
- D) Over 13600 kg

37- What is the name of manual which contain limitation within which the aircraft is to be considered airworthy?

- A) Technical manual
- B) Operations manual
- C) Flight manual
- D) Airworthiness manual

38- How many times in a year, pilot proficiency check shall take place?

- A) One
- B) Two (twice)
- C) Three
- D) Four

39- Which of the following DH and RVR are determined as minima for the Precision approach CAT I operations?

- A) 200 ft. / 550 m
- B) 100 ft. / 300 m
- C) No DH / 175 m
- D) No DH / 50 m

40- An instrument approach and landing using precision lateral and vertical guidance is known as:

- A) Precision APCH (3D)
- B) Non-precision APCH (2D)
- C) Circling APCH (2D)
- D) APCH with vertical guidance (APV) (3D)

41- A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time is known as:

- A) RNAV
- B) RNP
- C) RVSM
- D) RNP type

42- Flight crew members shall demonstrate the ability to speak and understand the language used for radiotelephony communications as specified in:

- A) Annex 6
- B) Annex 1
- C) Annex 18
- D) Annex 17

43- The Maximum certificated take-off mass of small airplane is:

- A) 27000 kg or less
- B) 7000 kg or less
- C) 5700 kg or less
- D) 13600 kg or less

44- Who is responsible to implement a safety management system?

- A) State of the operator
- B) Operator
- C) State
- D) ICAO

45- An operators establish and maintain a flight data analysis program as part of its safety management system for an airplane of a maximum certificated take-off mass:

- A) 27000 kg or less
- B) in excess of 27000 kg
- C) 5700 kg or more
- D) 13600 kg or less

46- Which of ICAO Annex shall be applicable to international general aviation operations with airplanes?

- A) Annex 6 Part II
- B) Annex 6 Part III
- C) Annex 6 Part I
- D) Annex 8

47- Which of the following terms shall be used to indicate aerodrome operating minima for Circling approach?

- A) MDA/H + Visibility/RVR
- B) DA/H + Visibility/RVR
- C) A + cloud condition
- D) B + cloud condition

48- Flight safety analysis program shall be established as part of safety management system by:

- A) State of operator
- B) Operator
- C) State
- D) State of registry

49- Which of ICAO Annex shall be applicable to international commercial air transport operations or international general aviation operations with helicopters?

- A) Annex 6 Part III
- B) Annex 6 Part II
- C) Annex 6 Part I
- D) Annex 8

50- A manual which contain procedures, instructions and guidance for use by operational personnel in the execution of their duties is called:

- A) Maintenance manual
- B) Operations manual
- C) Flight manual
- D) MEL

51- Pilot in command is responsible for the:

- A) Operation and safety of aircraft during flight time
- B) Operation and control of aircraft during flight time
- C) Operation and control and safety of aircraft
- D) All of the above

52- Who is responsible to approve and sign the operational flight plan?

- A) ATS
- B) Operator
- C) Pilot-in-command
- D) State

53- Operational manual shall be provided by:

- A) Pilot-in-command
- B) State
- C) State of operator
- D) All above incorrect

54- An airplane shall not be operated under the IFR or at night by a single pilot unless approved by the:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

55- When an enroute airplane encounter with one power unit inoperative, shall be able:

- A) To fly IFR
- B) To fly not below cruising level
- C) To fly not below minimum flight altitude
- D) To fly to alternate

56- Each flight crew member required to be at their station during:

- A) En-route
- B) Takeoff and Landing
- C) Cruise climb
- D) Only landing

57- Who is responsible for the safety of all passengers when the doors are closed?

- A) Cabin crew
- B) Pilot-in-command
- C) operator
- D) passenger himself

58- Fuel and oil record shall be retained by the operator for a period of:

- A) 25 days
- B) 30 days
- C) 90 days
- D) 3 month

59- The operator shall record the total cosmic radiation dose received by each crew member above 15000M (49000 ft.) over a period of:

- A) 12 month
- B) 12 month flight time
- C) 12 consecutive month
- D) 12 consecutive days

60- The amount of destination alternate fuel for turbine engine airplane where the aerodrome of intended landing is an isolated aerodrome is:

- A) Departure to Destination + 2 hrs fuel
- B) Departure to Destination + 2 hrs normal consumption
- C) Departure to Destination + 2 hrs Increased cruise consumption
- D) Departure to Destination + 2 hrs normal cruise consumption

61- How many destination alternate aerodromes shall be specified in flight plan for IFR flights?

- A) One
- B) Two
- C) At least one
- D) None

62- What is the meaning of trip fuel?

- A) fuel required to fly from take-off, until landing at the alternate aerodrome
- B) fuel required to fly from taxi, until landing at the destination aerodrome
- C) fuel required to fly from take-off, until landing at the destination aerodrome
- D) fuel required to fly from taxi, until holding at 1500 ft. above destination aerodrome

63- The method of specifying of minimum flight altitude shall be including in:

- A) Operations manual
- B) Aircraft operating manual
- C) Training manual
- D) Flight manual

64- En-route alternate aerodromes shall be selected and specified in:

- A) ATS flight plan
- B) Operational flight plan
- C) A or B
- D) A and B

65- Threshold crossing height (TCH) shall be established for:

- A) Precision approach (3D)
- B) Approach with vertical guidance (APV)(3D)
- C) Non precision approach (2D)
- D) A & B are correct

66- Flight preparation form shall be completed and certified by:

- A) Operator
- B) Pilot-in-command
- C) maintenance
- D) State of operator

67-The amount of fuel required for reciprocating engine (piston) airplanes when no destination alternate aerodrome is:

- A) Departure to Destination + 30 min
- B) Departure to Destination + 45 pounds
- C) Departure to Destination + 45 min
- D) Departure to Destination + 60 min

68-The level above destination or alternate aerodrome which shall be considered in fuel computing for turbine engine airplanes is:

- A) 4500 ft.
- B) 1500 ft.
- C) 3000 ft.
- D) 2000 ft.

69- When an Enroute aero plane (3 or more engines) encounter with any two engines becoming inoperative, shall be able to fly to:

- A) Near est a rodrome
- B) En- route alternante
- C) Destination
- D) Destination alternante

70- A take-off alternate aerodrome shall be selected and specified in:

- A) Operational flight plan
- B) ATS flight plan
- C) Filed flight plan
- D) Repetitive flight plan

71- Category II and Category III instrument approach and landing operations shall not be authorized unless Information is provided.

- A) DH
- B) RVR
- C) Visibility
- D) Radar

72- For which of the following pressure, the non-pressurized airplane, shall have sufficient breathing oxygen for all crew and 10 percent of passengers:

- A) 376 HPA
- B) 609HPA
- C) 623 HPA
- D) Less than 620 HPA

73- When an airplane shall have quick donning type of oxygen mask?

- A) Operating at an altitude with pressure of less than 700 HPA
- B) Operating at an altitude with pressure of less than 673 HPA
- C) Operating at an altitude with pressure of less than 620 HPA
- D) Operating at an altitude with pressure of less than 376 HPA

74- When an airplane shall be equipped with an indicator to measure total cosmic radiations?

- A) Operating above 15000 ft.
- B) Operating above 25000 ft.
- C) Operating above 49000 ft.
- D) Operating above 29000 ft.

75- Who is responsible to establish regulations for the purpose of managing fatigue?

- A) State
- B) Operator
- C) Flight standard
- D) State of the operator

76- Who is responsible to provide operations manual?

- A) State of the operator
- B) Operator
- C) State
- D) ICAO

77- Who is responsible to approve and publish an Instrument approach procedure?

- A) Operator
- B) State of the operator
- C) ATC
- D) State

78- When the pilot-in-command shall report any suspected defects to the operator?

- A) Without delay
- B) At the termination of flight
- C) Normally within 10 days
- D) Any time

79- Who is requiring that the aerodrome operating minima be established?

- A) State of the Operator
- B) State
- C) ICAO
- D) Operator

80- Destination alternate aerodromes shall be selected and specified in?

- A) Operational flight plan
- B) ATS flight plan
- C) A and B
- D) A or B

81- The aerodrome operating minima shall be established by?

- A) State
- B) ICAO
- C) State of operator
- D) Operator

82- RNP 4 means:

- A) 4 NM total performance with on-board performance monitoring and alerting.
- B) 4 NM lateral performance with on-board performance monitoring and alerting.
- C) 4 NM lateral and horizontal performance with on-board performance monitoring
- D) 4 NM horizontal performances with on-board performance monitoring and alerting

83- Air operator certificate shall be issued by:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

84- Completed flight preparation form shall be kept by operator for?

- A) 3 month
- B) 6 month
- C) 90 days
- D) 12 month

85- When the descend shall be continued beyond Aerodrome operating minima (MDA/H or DA/H)?

- A) At night
- B) In the case of radio failure
- C) In emergency
- D) in any case

86- Who is responsible for operation and safety of airplane and all persons on board during flight time?

- A) Co-pilot
- B) Operator
- C) Pilot-in-command
- D) State

87- Which flight shall carry the amount of breathing oxygen sufficient for all crew members and 10 percent of passengers?

- A) When pressure compartment is 700
- B) When pressure compartment is 620
- C) When pressure compartment is 376
- D) Between A and B

88- Which manual contain the operating limitation?

- A) Flight manual
- B) Operational manual
- C) Annex 6
- D) Annex 1

89- The 727 airplane shall be able in event of 2 engine failure to continue to fly to?

- A) Destination
- B) Enroute alternate
- C) Any airport
- D) Suitable airport

90- Within which manual, the method of determination of minimum flight altitude shall be included?

- A) Annex 2
- B) Annex 6
- C) Operations manual
- D) DOC 4444

91- Who is responsible for notifying the nearest appropriate authority by the quickest available means of any accident involving the airplane, resulting in serious injury or death of any person or substantial damage to the airplane or property.

- A) State
- B) Pilot-in-command
- C) Air traffic control
- D) Operator

92- Who is responsible to approve the flight time limitation?

- A) Operator
- B) State of operator
- C) ATC
- D) ICAO

93- Which manual shall include the checklist?

- A) Operations manual
- B) flight manual
- C) Airplane operating manual
- D) Annex 8

94- For which type of airplane, the 15% of fuel shall be considered?

- A) reciprocating engine(Piston)
- B) turbine engine
- C) A and B
- D) jet engine

95- If, after entering the final approach segment or after descending below 300 m (1 000 ft.) above the aerodrome, the reported VIS or controlling RVR falls below the specified minimum, the approach may be continued to:

- A) DH
- B) MDH
- C) OCH
- D) A or B

96- Safety harness includes:

- A) Shoulder straps
- B) Seat belt
- C) A and B
- D) A or B

97- Which of the following manual which contain procedures which shall be initiated by flight operations officer / flight dispatcher in the event of an emergency?

- A) Technical manual
- B) Operation manual
- C) Flight manual
- D) Aircraft operating manual

98- An operator shall ensure that any inadequacy of facilities observed in the course of operations is reported to:

- A) State of operator, without delay
- B) State, at the termination of flight
- C) Authority responsible for them, without delay
- D) State of operator, within 10 days

99- The method for establishing the minimum flight altitudes should be approved by:

- A) State of Operator
- B) Operator
- C) Air Traffic Control
- D) State of Registry

100- What is the amount of contingency fuel?

- A) 5% of planned trip fuel
- B) 10% trip fuel
- C) 5% of total fuel
- D) 5 minutes of holding fuel

101- Where RVR is used, the controlling RVR is the:

- A) Stop-end RVR
- B) Mid-point RVR
- C) Touchdown RVR
- D) All of them

102- For instrument approach and landing operations, aerodrome operating minima belowvisibility should not be authorized unless RVR information is provided.

- A) 1200 meter
- B) 300 meter
- C) 550 meter
- D) 800 meter

103- An instrument approach shall not be continued below above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is above the specified minimum.

- A) 300 m (1 000 ft.)
- B) Glide slope
- C) 600 m (2 000 ft.)
- D) 450 m (1 500 ft.)

104- An operator shall not engage in commercial air transport operations unless in possession of a valid air operator certificate issued by:

- A) State of operator
- B) State of Manufacture
- C) State
- D) State of registry

105- The take-off alternate aerodrome shall be located for airplanes having two power-units within a distance from the aerodrome of departure:

- A) Not more than a distance equivalent to a flight time of one hour
- B) Not less than a distance equivalent to a flight time of one hour at the single-engine cruise speed
- C) Not more than a distance equivalent to a flight time of one hour at the single-engine cruise speed
- D) Not less than a distance equivalent to a flight time of one hour

106- The flight manual shall be updated by implementing changes made mandatory by:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

107- The shall establish regulations specifying the limitations applicable to the flight time and flight duty periods for flight crew members.

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

108- All flight crew members shall communicate through boom or throat microphones:

- A) Above the transition level/altitude
- B) Below the transition level/altitude
- C) Below the transition altitude
- D) Above the transition level

109- Flight data recorder shall be capable to retain information recorded during its last:

- A) 25 hrs of flight time
- B) 25 hrs of its operation
- C) 25 hrs of last inspection
- D) 25 hrs of engine run

110- Cockpit voice recorder shall be capable of retaining the information recorded during at least the last:

- A) 30 days
- B) 30 hours
- C) 30 min
- D) any time

111- After 1 January 2016, Cockpit voice recorder shall be capable of retaining the information recorded during at least the last:

- A) 30 days
- B) 25 hours
- C) 30 min
- D) 2 hours

112- A Land plane shall carry life jacket when flying:

- A) More than 50 NM away from shore
- B) More than 50 SM away from shore
- C) More than 50 min away from shore
- D) More than 50 KM away from shore

113- An airplane shall be fitted with emergency power supply when it has:

- A) Max mass of 15000 kg
- B) Max mass of over 15000 kg
- C) Max mass of over 5700 kg
- D) Max mass of 5700 kg

114- The operator shall not assign a pilot to act as pilot-in-command or co-pilot except within preceding 90 days, the pilot has made:

- A) At least 3 landing
- B) At least 3 Take-off
- C) A and B
- D) A or B

115- Flight recorder type II A shall be capable to retain information during at least the last:

- A) 30 minutes
- B) 25 hours
- C) 25 minutes
- D) 30 hours

116- How many fire extinguishers shall be located on pilot's compartment?

- A) One
- B) Two
- C) At least one
- D) At least two

117- For flights in RVSM airspace, the threshold for the alert to the flight crew when a deviation occurs from the selected flight level:

- A) shall exceed \pm 300 ft.
- B) shall not exceed \pm 300 ft.
- C) Shall not exceed \pm 200 ft.
- D) shall not exceed \pm 100 ft.

118- All airplanes when operated as VFR flights shall be equipped with:

- A) 2 sensitive pressure altimeter
- B) At least 2 sensitive pressure altimeter
- C) 1 sensitive pressure altimeter
- D) At least 1 sensitive pressure altimeter

119- The instruments and equipment, including their installation in airplanes shall be approved or accepted by:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

120- Completed journey log book should be retained for:

- A) 90 days
- B) Three months
- C) At least one year
- D) The last six months' operations

121- The FDR container is to be painted in:

- A) Orange or yellow
- B) Red
- C) Black
- D) Yellow

122- All airplane on all flights shall carry:

- A) Operational manual
- B) flight manual
- C) Current suitable chart
- D) All above correct

123- The records of appropriate details of modifications and repairs of the airplane shall be kept for a minimum period of:

- A) 90 days
- B) 12 months
- C) 3 months
- D) 4 months

124- Pilot proficiency check shall be made:

- A) Twice within any month
- B) Twice within any period of one year
- C) Twice within any season
- D) one time per year

125- Which documents shall be including of information enable the pilot-in-command to determine the flight may be continued or not?

- A) Airplane flight manual
- B) ATC manual
- C) Maintenance manual
- D) Operations manual

126- What action shall be taken by a pilot-in-command following an act on unlawful Interference?

- A) Submit a report to state of the operator
- B) Submit a report to appropriate authority
- C) Submit a report to designated local authority
- D) Submit a report to security authority

127- Which maintenance can release an airplane for flight?

- A) Qualified by operator
- B) Qualified by annex 6
- C) Qualified by annex 1
- D) Qualified by state of operator

128- Long range over water means to fly over water for more than 120 min, at cruising speed or:

- A) 400 NM, whichever is lesser
- B) 400 KM, whichever is higher
- C) 400 NM, whichever is higher
- D) 400 KM, whichever is lesser

129- What is the minimum capability of emergency power supply to illuminate the artificial horizon?

- A) 45 min
- B) 30 min
- C) 60 min
- D) 120 min

130- Who is responsible to establish a training program to minimize unlawful interferences?

- A) State of operator
- B) State
- C) ICAO
- D) Operator

131- What shall be the certificated take-off mass of an airplane, equipped with type II FDR?

- A) Over 5700 kg up to and including 27000 kg
- B) Over 27000 kg
- C) Over 5700 kg up to 27000 kg
- D) A and B are correct

132- The flight manual contains the information specified in:

- A) Annex 18
- B) Annex 16
- C) Annex 8
- D) Annex 6

133- Which one will warn the flight crew, the unsafe terrain clearance while not in landing configuration?

- A) RADAR
- B) ACAS
- C) GPS
- D) GPWS

134- According to which ICAO annexes the flight crew shall be licensed?

- A) Annex 6
- B) Annex 11
- C) Annex 2
- D) Annex 1

135- According to which ICAO annexes the flight operations officer/flight dispatcher shall be licensed or qualified?

- A) Annex 6
- B) Annex 1
- C) Annex 2
- D) Annex 11

136- Which type of operation should be equipped with weather radar?

- A) Pressurized airplane
- B) Carrying passengers
- C) A + B are correct
- D) A or B are correct

137- How long a pilot-in-command is qualified to be utilized again on a route from its last flight?

- A) 90 days
- B) 12 months
- C) 3 months
- D) 4 months

138- An operator shall not assign a pilot to act as a cruise relief pilot unless:

- A) Within the preceding 90 days that pilot has made three take-off and landing
- B) Within the preceding 12 months, that pilot has made at least a one-way qualification flight
- C) Within the preceding 90 days that pilot has operated as a pilot-in-command, co-pilot or cruise relief pilot
- D) Within the preceding 12 months, that pilot has operated as a pilot-in-command, co-pilot or cruise relief pilot

139- Within which document a pilot-in-command can find information relating to any instrument becomes inoperative, the flight may continue or not?

- A) CDL
- B) Flight manual
- C) MEL
- D) MMEL

140- When a flight recorder shall be switched off?

- A) Enroute
- B) Take off
- C) Landing
- D) None

141- The flight compartment door shall be closed and locked from the time of:

- A) The external doors are closed
- B) Airplane commenced his taxi
- C) Embarkation
- D) Departure

142- When a pressurized airplane shall be equipped with a device to provide positive warning to the pilot-in-command in the case of loss of pressurization?

- A) Intends to fly at level with less than 620 HPA
- B) Intends to fly at level with less than 376 HPA
- C) Intends to fly at level with less than 600 HPA
- D) Intends to fly at level with less than 720 HPA

143- The pilot-in-command shall declare minimum FUEL when:

- A) Any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.
- B) This is an emergency situation exist having committed to land at a specific aerodrome.
- C) Calculated usable fuel available is less than the planned final reserve fuel.

144- The records of maintenance release form of the airplane shall be kept for a minimum period of:

- A) 90 days
- B) one year
- C) 3 months
- D) 4 months

145- How many ELT shall have an airplanes authorized to carry more than 19 passengers after 1 July 2008?

- A) At least two ELTs, one of which shall be automatic
- B) Two ELTs of any type
- C) At least one automatic ELT
- D) At least two

146- How long is EDTO/ETOPS threshold time?

- A) 90 min
- B) 60 min
- C) 45 min
- D) 30 min

147- How many ELT shall have an airplanes authorized to carry more than 19 passengers?

- A) At least two ELTs, one of which shall be automatic
- B) Two ELTs of any type
- C) At least one automatic ELT
- D) At least two

148- The pilot-in-command shall declare MAYDAY FUEL when:

- A) Any change to the existing clearance to that aerodrome may result in landing with less than the planned final reserve fuel.
- B) This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.
- C) Calculated usable fuel available is less than the planned final reserve fuel.

149- MEL shall be approved by:

- A) State of manufacture
- B) Operator
- C) State of design
- D) State of operator

150- The standard of noise certification is contained in?

- A) Annex 18
- B) Annex 16 Vol I
- C) Annex 16 Vol II
- D) Annex 8

151- For flights in defined portions of airspace or on routes where a PBN has been prescribed, an airplane shall be authorized by thefor operations in such airspace.

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

152- How many altimeter setting shall be equipped an airplane intended to operate as a controlled VFR flight?

- A) One
- B) Two
- C) At least One
- D) A or B

153- Who is responsible for the submission of journey log book?

- A) Operator
- B) Pilot-in-command
- C) State
- D) State of the operator

154- Which document shall contain the MEL?

- A) Aircraft operating manual
- B) Route manual
- C) Operation manual
- D) flight manual

155- Which document specified the number and composition of flight crew member?

- A) Airplane flight manual
- B) Annex 6
- C) Operations manual
- D) Aircraft operating manual

156- Who is responsible to submit a report regarding act of an unlawful interference authority without delay?

- A) Pilot-in-command
- B) Operator
- C) ATC
- D) All

157- How many ELT shall have an airplanes authorized to carry 19 passengers or less?

- A) One ELT
- B) Two ELTs of any type
- C) At least one automatic ELT
- D) At least one ELT of any type

158- After 1 January 2005 all airplanes of a maximum certificated take-off mass of over 5 700 kg shall be equipped with:

- A) Type I FDR
- B) Type II FDR
- C) Type IA FDR
- D) Type IIA FDR

159- Flight data recorder type IA, I and II shall be capable to retain information during at least the last:

- A) 30 hours
- B) 25 hours
- C) 30 minutes
- D) 25 minutes

160- What shall be the type of FDR with Max mass of 27000 kg?

- A) Type II
- B) Type I
- C) Type IIA
- D) All

161- For flights in defined portions of airspace where minimum navigation performance specifications (MNPS) are prescribed, an airplane has been authorized by thefor MNPS operations.

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

162- The color of the markings of break-in points shall be:

- A) Red
- B) Yellow
- C) Black
- D) A or B

163- Single-engine airplanes shall only be operated in conditions of, and over such routes and diversions there from, that permit a safe forced landing to be executed in the event of engine failure:

- A) VMC
- B) IMC
- C) weather and light
- D) Daylight

164- Information for pilots and flight operations personnel on flight procedure parameters and operational procedures are contained in:

- A) Annex 6
- B) Annex 8
- C) PANS-ATM
- D) PANS-OPS Volume I

165- A seat or berth for each person over an age to be determined by:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

166- Ground and flight training program shall be approved by:

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

167- The operator shall include in the operations manual:

- A) MMEL
- B) CDL
- C) MEL
- D) All answers are correct

168- All turbine engine aircraft with maximum certificated take-off mass is excess of or carrying shall be equipped with GPWS which has a forward looking terrain avoidance function.:

- A) 5700 kg – 9 passengers
- B) 27000 kg – 30 passengers
- C) 15000 kg – 15 passengers
- D) 15000 kg – 9 passengers

169- An operator shall not employ electronic navigation data products for application in the air and on the ground unless approved by:

- A) Operator
- B) State of Operator
- C) State
- D) State of Registry

170- For flights in defined portions of airspace where a RVSM is applied, an airplane shall be authorized by thefor operation in the airspace concerned.

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

171- VFR flights which are operated as controlled flights shall be equipped with:

- A) VFR instruments
- B) IFR instruments
- C) GPWS
- D) ELT

172- For flights in defined portions of airspace or on routes where an RCP type has been prescribed, an airplane shall be authorized by thefor operations in such airspace.

- A) State of Operator
- B) Operator
- C) State
- D) State of Registry

173- The total number of oxygen dispensing units on an airplane shall:

- A) Exceed the number of passenger and cabin crew seats by at least 5 per cent
- B) Equal to the number of passenger and cabin crew seats
- C) Exceed the number of passenger and cabin crew seats by at least 10 per cent
- D) Exceed the number of passenger seats

174- Navigation for flights under the visual flight rules is accomplished by:

- A) Instrument
- B) visual reference to landmarks
- C) VMC
- D) IMC

175- Flight recorder comprises?

- A) Cockpit voice recorder
- B) Flight data recorder
- C) A or B
- D) A and B

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	D	41	D	81	D	121	A
2	D	42	B	82	B	122	D
3	A	43	C	83	A	123	A
4	D	44	B	84	A	124	B
5	C	45	B	85	D	125	D
6	C	46	A	86	C	126	C
7	A	47	C	87	D	127	C
8	D	48	B	88	A	128	A
9	C	49	A	89	B	129	B
10	C	50	B	90	C	130	D
11	B	51	A	91	B	131	A
12	D	52	C	92	B	132	C
13	D	53	D	93	C	133	D
14	A	54	A	94	A	134	D
15	B	55	C	95	D	135	B
16	C	56	B	96	C	136	C
17	D	57	B	97	B	137	B
18	B	58	D	98	C	138	C
19	A	59	C	99	A	139	C
20	C	60	D	100	A	140	D
21	B	61	C	101	C	141	A
22	D	62	C	102	D	142	B
23	C	63	A	103	A	143	A
24	B	64	D	104	A	144	B
25	A	65	D	105	C	145	A
26	B	66	B	106	D	146	B
27	A	67	C	107	A	147	C
28	D	68	B	108	B	148	C
29	C	69	B	109	B	149	D
30	D	70	A	110	C	150	B
31	B	71	B	111	D	151	A
32	B	72	C	112	A	152	B
33	A	73	D	113	C	153	B
34	D	74	C	114	C	154	C
35	D	75	D	115	A	155	C
36	B	76	B	116	C	156	A
37	C	77	D	117	B	157	D
38	B	78	B	118	A	158	C
39	A	79	A	119	D	159	B
40	A	80	C	120	D	160	A

Question	Answer
161	A
162	D
163	C
164	D
165	A
166	A
167	C
168	A
169	B
170	A
171	B
172	A
173	C
174	B
175	D

Flight Operation Officer Note

Flight Operation Officer Note

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Flight Operation Officer Note

ANNEX 10



1- How long the test signal shall be made?

- A) 10 seconds
- B) Minimum 10 seconds
- C) Maximum 10 seconds
- D) All answers are incorrect

2- Which of the following message shall be handled by inter-pilot air-to-air communication when necessary?

- A) Regulatory messages
- B) safety messages
- C) Meteorological messages
- D) A and B

3- How long elapse time is required between the first and before the second call?

- A) 10 seconds
- B) at least 10 seconds
- C) Maximum 10 seconds
- D) none

4- What language shall be used by air-ground radiotelephony communication?

- A) Language used by ground station
- B) English language
- C) A or B are correct
- D) A or one of ICAO language

5- Which publication shall indicate the languages used by ground station?

- A) AIP
- B) Annex 10
- C) Doc 4444
- D) Annex 2

6- Which ICAO annexes specifies the required level of language proficiency?

- A) Annex 1
- B) Annex 2
- C) Annex 6
- D) Annex 10

7- How the number of altimeter setting shall be transmitted?

- A) Whole thousand
- B) a + whole hundred
- C) Each digit separately
- D) All answers are correct

8- How the altitude of 15,500 (ft.) shall be transmitted?

- A) fifteen thousand, five hundred
- B) one five thousand, five hundred
- C) one five five zero zero
- D) one five five hundred

9- The rate of speech should not be?

- A) Less than 100 words per minutes
- B) less than 60 words per minutes
- C) not more than 100 words per minutes
- D) more than 60 words per minutes

10- For which of the following phrases, the phrase "ROGER" may be used?

- A) READ BACK
- B) AFFIRM
- C) NEGATIVE
- D) NONE

11- The suffix of the call sign of direction finding station is...

- A) Information
- B) radio
- C) Homer
- D) delivery

12- The suffix of the call sign of an approach control unit providing radar service for departure traffic is:

- A) Approach
- B) Departure
- C) Radar
- D) Control

13- The full call sign may consist of radiotelephony designator of the operator and

- A) The full characters of registration mark
- B) The last three characters of registration mark
- C) The last four characters of registration mark
- D) The first and last two characters of registration mark

14- Which of the following term may be used for abbreviated call sign?

- A) Aircraft operating agency designator
- B) Aircraft model
- C) Aircraft manufacture
- D) All answers are correct

15- When the aircraft radiotelephony call sign may be changed?

- A) During IFR
- B) Interest of safety
- C) Bad weather
- D) Emergency

16- Who is authorized to change the aircraft radiotelephony call sign temporarily?

- A) Pilot-in-Command
- B) Operator
- C) ATC unit
- D) Dispatcher

17- What is the inter-pilot air-to-air channel?

- A) 121.5MHz
- B) 123.45 MHz
- C) 123.45 kHz
- D) 243 kHz

18- Which of the following frequencies, are separated by 25 kHz?

- A) 123.45-MHz
- B) 118.0MHz
- C) 119.0MHz
- D) All answers are correct

19- Which of the following channel are separated by 8.33 kHz?

- A)121.5MHz
- B) 123.45 MHz
- C) 118.025MHz
- D) 133.02 MHz

20- What is the readability scale of number 2?

- A) Readable now and then
- B) Unreadable
- C) Readable but with difficulty
- D) None of above

21- How many times during air-ground communication the message shall be transmitted by an aircraft after the phrase "TRANSMITTING BLIND"?

- A) One
- B) Twice
- C) At least one
- D) At least two

22- During which case of radio failure, the aircraft station shall advise the time of its next intended transmission?

- A) Air-ground
- B) Ground-to-air
- C) Receiver failure
- D) All answers are incorrect

23- How many pre-selected audio tones may be used to determine "SELCAL"?

- A) 4
- B) 3
- C) 2
- D) 1

24- Where the "SELCAL" should be submitted?

- A) operational flight plan
- B) operating manual
- C) departure message
- D) ATS flight plan

25- If "SELCAL" remain unanswered, when an aeronautical station may revert to voice communication?

- A) After 2 calls on the primary frequencies
- B) After 2 calls. on the secondary frequencies
- C) a and b
- D) a or b

26- How many times, the distress signal may be transmitted?

- A) 2
- B) 3
- C) min 2
- D) min 3

27- How many times, the urgency signal may be transmitted?

- A) 1
- B) 2
- C) 3
- D) 4

28- How may an aircraft communicate the intents of medical transport?

- A) PANPAN
- B) MAY-DEE-CAL
- C) MAYDAY
- D) A & B for three times

29- For which bands of frequencies, the SELCAL should be utilized?

- A) VHF + HF
- B) VHF + UHF + MF
- C) VHF
- D) HF only

30- What phrase shall request for verification of numbers?

- A) ACKNOWLEDGE the number
- B) READ BACK the number
- C) SAY AGAIN the number
- D) CHECK the number

31- If an ATC clearance is not suitable to the pilot in command, he may:

- A) Proceed according to the operational flight plan.
- B) Request and obtain an amended clearance.
- C) Follow the given clearance.
- D) Both A and C are correct.

32- What is the meaning of "Over" in radiotelephony?

- A) My transmission is ended and I expect a response from you.
- B) My transmission ended and no response is expected.
- C) Repeat all of your last transmission.
- D) Pass me the following information.

33- What is the meaning of "Out" in radiotelephony?

- A) My transmission ended and no response is expected.
- B) This exchange of transmission is ended and no response is expected.
- C) Repeat all of your last transmission.
- D) Pass me the following information.

34- What is the meaning of "Say again" in radiotelephony?

- A) My transmission ended and no response is expected.
- B) Repeat all or the following part of your last transmission.
- C) Repeat all of your last transmission.
- D) Pass me the following information.

35- What is the meaning of "Report" in radiotelephony?

- A) My transmission ended and no response is expected.
- B) Repeat all or the following part of your last transmission.
- C) Repeat all of your last transmission.
- D) Pass me the following information.

36- A time of "11:20" hour is transmitted as:

- A) one one two zero or two zero.
- B) eleven twenty hours.
- C) eleven twenty.
- D) twenty past eleven.

37- Before transmitting the pilot should:

- A) Make sure that the aircraft is leveled off.
- B) Listen out on the frequency to ensure no interference with another station already transmitting will occur.
- C) Always write the message and read it during the transmission.
- D) Make sure that the emergency frequency is tuned in at the same Time.

38- My message will be more effective and understandable if I:

- A) Maintain the speaking volume at a constant level.
- B) Use the words twice method.
- C) Stress the end of message.
- D) Stress every beginning of message.

39- What is meant by good microphone technique?

- A) Keep the microphone far away since it improves the readability.
- B) Speak very loudly into the microphone.
- C) Use a normal conversation tone, speak clearly and distinctly.
- D) Make large use of hesitation sounds as ER.

40- What are the consequences of an aircraft with a transmit button stuck on?

- A) It improves readability for everyone else.
- B) It has no effect on other transmissions.
- C) It prevents other aircraft transmissions being heard but does not affect the readability of ATC transmissions.
- D) No one else can use the frequency.

41- What does the phrase READ BACK mean?

- A) You correctly receive this message
- B) Let me know that you have received and understood this message
- C) Repeat all other specified part, of this message back to me exactly as received.
- D) Check and confirm with originator.

42- What does the phrase ROGER mean?

- A) A direct answer in the affirmative.
- B) I have received all of your last transmission.
- C) A direct answer in the negative.
- D) Cleared for takeoff or cleared to land.

43- If a controller would like to say to you "PASS ME THE FOLLOWIN INFORMATION" he would use the expression:

- A) READBACK
- B) REPORT
- C) SAY AGAIN
- D) REQUEST

44- Which phrase shall be used if you want to say YES?

- A) Roger
- B) Yes
- C) Affirm
- D) Affirmative

45- What does the instruction "VACATE LEFT." mean?

- A) Turn left. to leave the runway.
- B) Give way to aircraft from the left..
- C) Clear the runway immediately.
- D) Hold position on the left. side of the runway.

46- Which phrase shall be used if you want to say "I WOULD LIKE TO KNOW "or "I WISH TO OBTAIN"?"

- A) Confirm
- B) Report
- C) Acknowledge
- D) Request

47- How shall a pilot inform a radar control unit that the aircraft is not equipped with transponder?

- A) No SSR.
- B) Negative transponder.
- C) Transponder not available.
- D) Negative squawk.

48- Which phrase shall be used if you want to say "PASS ME THE FOLLOWING INFORMATION"?

- A) Say again
- B) Request
- C) Report
- D) Check

49- Which phrase shall be used if the repetition of an entire message is required?

- A) What was your message?
- B) Repeat your message.
- C) Say again.
- D) Repeat your last transmission.

50- What does the instruction "GO AROUND" mean?

- A) Overtake the aircraft ahead.
- B) Carry out a missed approach.
- C) Make a 360° turn.
- D) Proceed with your message.

51- Which phraseology is to be used to ask the control tower for permission to taxi on a runway in the direction opposite to that in use?

- A) Request backtrack on runway.
- B) Clearance to backtrack.
- C) To enter back runway.
- D) Backtrack clearance.

52- How shall a pilot inform the control tower that he is prepared for takeoff?

- A) Ready to go.
- B) Ready for takeoff.
- C) Ready to line-up.
- D) Ready for departure

53- Which of these phrases is used to inform the control tower that a pilot is performing a missed approach?

- A) Pulling up.
- B) Overshooting.
- C) Will make another approach.
- D) Going around.

54- What does the instruction "ORBIT RIGHT" mean?

- A) Make 360° turns to the right.
- B) Turn right to avoid other traffic.
- C) Right-hand circuits are in use.
- D) Leave the runway to the right.

55- Which phrase shall be used if you want to say "AN ERROR HAS BEEN MADE IN THIS TRANSMISSION" the correct version is?

- A) QNH 1017, negative QNH 1016.
- B) QNH 1017, correction QNH 1016.
- C) QNH 1017, negative 1016.
- D) QNH 1017, negative I say again 1016.

56- Which phrase shall be used to confirm that a message has been repeated correctly?

- A) That is right.
- B) Correct.
- C) Affirm.
- D) That is affirmative.

57- Which of these statements best describes the meaning of the phrase STANDBY?

- A) Wait and I will call you.
- B) Continue on present heading and listen out.
- C) Select STANDBY on the SSR transponder.
- D) Permission granted for action proposed.

58- Which phrase shall be used if you want to say "I UNDERSTAND YOUR MESSAGE AND WILL COMPLY WITH IT"?

- A) Will comply with your instruction.
- B) Roger.
- C) WILCO.
- D) OK, will do it.

59- An aircraft wishes to obtain a bearing from a VDF station that will be plotted on the chart relative to True North. The correct radio communication call is:

- A) G-BNKD request QDM, G-BNKD.
- B) True bearing, true bearing, G-BNKD request true bearing, G-BNKD.
- C) G-BNKD request QGH, G-BNKD.
- D) G-BNKD training fix, training fix, training fix, G-BNKD.

60- Which of the following sequences shows the correct elements of a position report in the correct order?

- 1) Call sign
- 2) Reported position
- 3) Heading (°M)
- 4) Level or altitude
- 5) Next position
- 6) ETA of the next position
- 7) aircraft type
- 8) time of reported position

- A) 1, 2, 3, 4, 5, 6
- B) 1,7,2, 6, 4
- C) 1,2,8,4,5,6
- D) 1,2,4,5,6

61- If a pilot receives an instruction from ATC which cannot be carried out, the reply should use the phrase:

- A) CANCEL INSTRUCTION
- B) UNABLE
- C) NEGATIVE INSTRUCTION
- D) REGRET CANNOT FOLLOW INSTRUCTION

62- You are making a long straight in approach to land, at what range would you make the call "LONG FINAL"?

- A) 2 NM
- B) 4 NM
- C) Between 8 and 4 NM
- D) 3 NM

63- What does the word "NEGATIVE" mean?

- A) Permission not granted.
- B) Proposed action granted.
- C) Disregard last instruction
- D) Consider that transmission as not sent.

64- What does the word "WILCO" mean?

- A) I read you fine.
- B) I have received all of your last transmission.
- C) I understand your message and will comply with it.
- D) As communication is difficult, I will call you later.

65- Which word or phrase shall be used if you want to say "WAIT AND I WILL CALL YOU"?

- A) Roger
- B) Go ahead
- C) Standby
- D) WILCO

66- Which of the following calls is a "GENERAL CALL"?

- A) YX-DEF Stephenville CONTROL
- B) YX-EFG, YX-FGH over.
- C) ALL STATIONS Stephenville CONTROL.
- D) YX-ABC, YX-BCD, YX-CDE Stephenville CONTROL.

67- When may the name of the location or the call sign suffix in the call sign of an aeronautical station be omitted?

- A) In dense traffic during rush hours.
- B) Never.
- C) Only after the aeronautical station has used the abbreviated call sign.
- D) When satisfactory communication has been established and provided it will not be confusing to do so.

68- When should aircraft XV-ABC call Stephenville TOWER on initial call?

- A) TOWER XV-ABC
- B) Stephenville TOWER X-BC
- C) Stephenville XV-ABC
- D) Stephenville TOWER XV-ABC

69- What is the radiotelephony call sign for the aeronautical station providing surface movement control of aircraft on the maneuvering area?

- A) Ground
- B) Approach
- C) Tower
- D) Control

70- What is the radiotelephony call sign suffix for the aeronautical station indicating aerodrome information service?

- A) FLIGHT CENTRE
- B) FLIGHT INFORMATION CENTRE
- C) INFORMATION
- D) CONTROL

71- An aerodrome located at HEADCORN notified as having an Aerodrome Flight Information Service (AFIS) will identify itself to aircraft using the call sign:

- A) HEADCORN INFORMATION
- B) HEADCORN RADIO
- C) HEAD CORN TOWER
- D) HEADCORN AFIS

72- When is an aircraft station allowed to use its abbreviated call sign?

- A) In dense traffic.
- B) Only after satisfactory communication has been established.
- C) Provided no confusion is likely to result.
- D) After it has been addressed in this manner by the aeronautical ground station.

73- Which of the following abbreviated call signs of Cherokee XV-ABC is correct?

- A) Cherokee X-BC
- B) Cherokee XV-BC
- C) Cherokee BC
- D) Cherokee X-ABC

74- Which of the following abbreviated call signs of aircraft XV-ABC is correct?

- A) XV-BC
- B) X-BC
- C) ABC
- D) BC

75- Aircraft X-BC has been instructed to contact Stephenville TOWER on frequency 118.7. What is the correct response to indicate that it will follow this instruction?

- A) Stephenville TOWER X-BC.
- B) Will change to TOWER X-BC.
- C) Changing over X-BC.
- D) 118.7 X-BC.

76- In the event that a pilot is required to make a blind transmission, this should be made:

- A) Only once on the designated frequency.
- B) Twice on the designated frequency.
- C) On the emergency frequency only.
- D) During VFR flights only.

77- A message preceded by the phrase "TRANSMITTING BLIND DUE RECEIVER FAILURE" shall be transmitted:

- A) On the regional guard frequency.
- B) On the frequency presently in use.
- C) On the international emergency frequency.
- D) On all available aeronautical stations.

78- When transmitting a message preceded by the phrase "TRANSMITTING BLIND DUE TO RECEIVER FAILURE" during an en-route flight, the aircraft station shall also:

- A) Land at the nearest airfield/airport.
- B) Join base leg when approaching the airfield for landing.
- C) Advise the time of its next intended transmission.
- D) Return to the airport of departure.

79- On the readability scale what does READABILITY 1 mean?

- A) Readable but with difficulty.
- B) Readable.
- C) Perfectly readable.
- D) Unreadable.

80- On the readability scale what does READABILITY 3 mean:

- A) Readable but with difficulty.
- B) No problem to understand.
- C) Loud and clear.
- D) Unreadable.

81- Aircraft XV-ABC is making a test transmission with Stephenville TOWER on frequency 118,7. What is the correct phrasing for this transmission?

- A) Stephenville TOWER XV-ABC signal check.
- B) Stephenville TOWER XV-ABC preflight check.
- C) Stephenville TOWER XV-ABC radio check 118,7.
- D) Stephenville TOWER XV-ABC frequency check.

82- On the readability scale what does READABILITY 5 mean?

- A) Perfectly readable.
- B) Unreadable.
- C) Problem to understand.
- D) Readable but with difficulty.

83- Which elements of instructions or information shall always be read back?

- A) Surface wind, visibility, ground temperature, runway in-use, altimeter settings, heading and speed instructions.
- B) Runway-in-use, visibility, surface wind, heading instructions, altimeter settings.
- C) Runway-in-use, altimeter settings, SSR codes, level Instructions, heading and speed instructions.
- D) Wind speed, runway-in-use, altimeter settings, level instructions, SSR codes.

84- Cherokee XY-ABC receives the following instruction:

"X-BC CLIMB STRAIGHT AHEAD UNTIL 2500 FEET BEFORE TURNING RIGHT. WIND 270 DEGREES 6 KNOTS. CLEARED FOR TAKEOFF". What is the correct read back?

- A) Straight ahead, 2500 feet right turn, wind west 6 knots, cleared for takeoff, X-BC.
- B) Wilco, cleared for takeoff, X-BC.
- C) Right turn after 2500, roger, X-BC.
- D) Straight ahead, at 2500 feet right turn, cleared for takeoff, X-BC.

85- An aircraft is instructed to hold short of the runway-in-use. What is the correct phraseology to indicate it will follow this instruction?

- A) WILCO
- B) Holding short.
- C) Will stop before.
- D) Roger.

86- Shall an ATC route clearance always be read back?

- A) No, if the communication channel is overloaded.
- B) No, if the ATC route clearance is transmitted in a published form (e.g. Standard Instrument Departure Route/SID).
- C) Yes, unless authorized otherwise by ATS authority concerned.
- D) No, if the content of the ATC clearance is clear and no confusion is likely to arise.

87- Aircraft X-BC has been instructed to listen on ATIS frequency 123,25, on which information are being broadcast. What is the correct response to indicate that it will follow this instruction?

- A) Checking 123,25 X-BC.
- B) Changing to 123,25 X-BC.
- C) Will contact 123,25 X-BC.
- D) Monitoring 123,25 X-BC.

88- How should a pilot terminate the read-back of an ATC clearance?

- A) With his own aircraft call sign.
- B) With the word "wilco",
- C) With the ATC ground station call sign.
- D) With the word "roger".

89- A pilot is required to read back the following ATC messages:

- A) Altimeter settings, weather information, airways clearances, information regarding the proximity of other aircraft and taxi instructions.
- B) Altimeter settings, weather information, information regarding the proximity of other aircraft and taxi instructions.
- C) Altimeter settings, airways clearances, SSR operating instructions, level instructions and any message when requested by ATC .
- D) Altimeter settings, taxi instructions, takeoff clearances, weather information and any other information given by ATC.

90- When asked by ATC "ARE YOU ABLE TO MAINTAIN FL80?" the correct reply contains the word:

- A) ROGER
- B) WILCO.
- C) AFFIRM or NEGATIVE
- D) CLEARED

91- RADAR instructs aircraft X-BC: "X-BC RESET SQUAWK 1015". What does this mean?

- A) X-BC has been identified at 10:15 (UTC).
- B) X-BC is requested to set new code 1015.
- C) X-BC has been identified by SSR code 1015.
- D) X-BC is requested to reselect SSR code 1015.

92- What does the phrase "SQUAWK 1234" mean?

- A) Give a short count for DF (direction finder).
- B) Select code 1234 on the SSR transponder.
- C) Make a test transmission on 123,4 MHz.
- D) Standby on frequency 123,4 MHz.

93- With the SSR transponder selected ON and "ALT" (Mode C) selected, an ATIS requests: "G-ABCD, Verify your level, " this is to:

- A) Identify the aircraft position.
- B) Check your altimeter setting.
- C) Calibrate the radar equipment.
- D) Verify the accuracy of the Mode C level information displayed to the controller.

94- When the term "BROKEN" is used in aviation routine weather report (METAR), the amount of clouds covering the sky is:

- A) 5 to 7 oktas.
- B) 1 to 4 oktas.
- C) 8 oktas below 10.000 feet.
- D) D)No clouds below 5.000 feet.

95- What is the correct way of expressing visibility?

- A) Visibility 1,2 kilometer's.
- B) Visibility 1.200 feet.
- C) Visibility 1,2 nautical miles.
- D) Visibility 1.200 meter's.

96- When the term "CAVOK" is used in an aviation routine weather report (METAR), the values of visibility and clouds are:

- A) Visibility more than 5.000 m, no clouds below 1.500 m AGL.
- B) Visibility 10 km or more, no clouds below 1.500 feet AGL.
- C) Visibility more than 8 km, no clouds below 3.000 feet AGL.
- D) Visibility 10 km or more, no clouds below 5.000 feet AGL.

97- When the term "OVERCAST" is used in an aviation routine weather report (METAR), the amount of clouds covering the sky is:

- A) 50% or more.
- B) 100%.
- C) Less than 50%.
- D) No clouds but poor ground visibility.

98- When the term "SCATTERED" is used in an aviation routine weather report (METAR), the amount of clouds covering the sky is:

- A) More than half but less than overcast (5 to 7 oktas).
- B) Half or less than half (3 or 4 oktas).
- C) Sky entirely covered (8 oktas).
- D) No clouds below 5.000 feet/GND.

99- How is the visibility in an aviation routine weather report (METAR) expressed in plain language?

- A) In nautical miles only.
- B) Up to 1.500 m in meters, above in kilometers
- C) In feet and nautical miles.
- D) Up to 5.000 m in meters, above in kilometers.

100- How can aviation routine weather reports (METAR) of specific airports are obtained by aircraft in flight?

- A) SIGMET
- B) ATIS
- C) AFIS
- D) VOLMET

101- Which information can aircraft in flight obtain by VOLMET service?

- A) SIGMET.
- B) Runway reports.
- C) Aviation routine weather reports (METAR) of specific airports.
- D) SPECI and TAF

102- What action is required by the pilot of an aircraft station if he/she is unable to establish radio contact with an aeronautical station?

- A) Squawk mode A code 7500.
- B) Divert to the alternate airport.
- C) Try to establish communication with other aircraft or aeronautical stations.
- D) Land at the nearest aerodrome appropriate to the route of flight.

103- An aircraft station fails to establish radio contact with an aeronautical station on the designated frequency. What action is required by the pilot?

- A) Return to the airport of departure.
- B) Continue the flight to the destination airport without any communication.
- C) Attempt to establish contact with the station on an alternative frequency.
- D) Land at the nearest airport without an ATC unit.

104- What is the transponder code for radio communication failure?

- A) 7200
- B) 7600
- C) 7500
- D) 7700

105- Under which of the following circumstances shall an aircraft station squawk 7600?

- A) In case of radio communication failure.
- B) When entering bad weather areas.
- C) When approaching a prohibited area.
- D) When flying over desert areas.

106- When shall the pilot of an aircraft experiencing communications failure keep a watch for instructions passed by visual signals?

- A) When entering a FIR during an IFR flight.
- B) When flying VFR above clouds.
- C) When the aircraft is entering the traffic pattern of an uncontrolled airport.
- D) When the aircraft is forming part of the aerodrome traffic at a controlled aerodrome.

107- Aircraft is squawking 7600. This indicates:

- A) It is diverting to the alternate aerodrome.
- B) It is unable to establish communication due to radio equipment failure.
- C) It is requesting immediate level change.
- D) It is about to make a forced landing.

108- If all attempts to establish radio contact with a ground station fail, the pilot of an airplane shall transmit messages preceded by the phrase:

- A) PANPAN, PANPAN, PANPAN.
- B) Transmitting blind.
- C) Read you one, read you one.
- D) How do you read?

109- An aircraft squawking 7700 indicates to the ground station that:

- A) The aircraft's transceiver is unserviceable.
- B) The aircraft is being hijacked.
- C) The aircraft is in distress.
- D) There is a sick passenger on board.

110- Distress is defined as:

- A) A condition concerning the attitude of an aircraft when intercepting the localizer during an ILS approach.
- B) A condition concerning the safety of an aircraft or of a person on board, but which does not require immediate assistance.
- C) A condition of being threatened by serious and/or imminent danger and requiring immediate assistance.
- D) A condition concerning the safety of a person on board or within sight and requiring immediate assistance.

111- An aircraft in distress shall send the following signal by radiotelephony:

- A) PANPAN, PANPAN, PANPAN
- B) DETRESFA, DETRESFA, DETRESFA
- C) MAYDAY, MAYDAY, MAYDAY
- D) URGENCY, URGENCY, URGENCY

112- The frequency used for the first transmission of a MAYDAY call shall be:

- A) The distress frequency 121,5 MHz
- B) The frequency currently in use.
- C) Any other international emergency frequency.
- D) Any frequency at pilot's discretion.

113- The distress message shall contain as many as possible of the following elements/details:

- A) Aircraft call sign, nature of distress, pilots intention, present position, level and heading.
- B) Aircraft call sign, route of flight, destination airport.
- C) Aircraft call sign, aerodrome of departure, position and level.
- D) Aircraft call sign, present position, assistance required.

114- An aircraft in state of emergency shall squawk:

- A) 7600
- B) 7700
- C) 7500
- D) 7200

115- Under which of the following circumstances shall an aircraft squawk 7700?

- A) When following a SID.
- B) When flying within controlled airspace.
- C) When passing the transition level.
- D) In distress.

116- Distress is defined as a condition:

- A) Requiring immediate assistance and danger may or may not be threatened.
- B) A condition of being threatened by serious and/or imminent danger, and of requiring immediate assistance.
- C) Concerning the safety of an aircraft or other vehicle, or some person on board or within sight, but does not require immediate assistance.
- D) Concerning the safety of any aircraft, ship or other vehicle.

117- A Distress or Urgency call shall be preceded by the prefix MAYDAY or PANPAN transmitted:

- A) Once.
- B) Twice.
- C) Three times.
- D) Until acknowledged.

118- Immediately following the MAYDAY prefix, an aircraft in distress should transmit:

- A) The aircraft call sign twice.
- B) The nature of the emergency.
- C) The call sign of the station addressed, when it is known and the circumstances permit.
- D) Its last known position.

119- Which frequency shall be used for the first transmission of an urgency call?

- A) The international emergency frequency.
- B) The air-ground frequency in use at the time.
- C) The regional guard frequency.
- D) Any frequency at pilot's discretion.

120- An aircraft transmitting a distress message is required to give its position as:

- A) The most accurate possible using GPS if fitted.
- B) Present or last known position, altitude or level and heading.
- C) Position relative to a VRP.
- D) Latitude and longitude.

121- An aircraft in distress that is equipped with a SSR transponder should SQUAWK:

- A) 7000
- B) 7500
- C) 7600
- D) 7700

122- What does the phrase "BREAKBREAK" mean?

- A) The exchange of transmissions is ended and no response is expected.
- B) It indicates the separation between portions of a message transmitted to an aircraft station.
- C) It indicates the separation between messages transmitted to different aircraft in a very busy environment.
- D) My transmission is ended and I expect a response from you.

123- A distress call shall be preceded by the prefix MAYDAY transmitted:

- A) Twice.
- B) Three times.
- C) Once.
- D) One to three times after the aircraft call sign.

124- An urgency message shall be preceded by the radiotelephony urgency signal:

- A) ALERFA, spoken three times.
- B) URGENCY, spoken three times.
- C) MAYDAY, spoken three times.
- D) PANPAN, spoken three times.

125- Urgency is defined as:

- A) A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.
- B) A condition concerning the safety of a person on board or within sight and requiring immediate assistance.
- C) A condition concerning the attitude of an aircraft when intercepting the localizer during an ILS approach.
- D) A condition concerning the safety of an aircraft other vehicles or of a person on board, but which does not require immediate assistance.

126- The subsequent content of a distress or urgency message must consist of the following items:

1. Position
2. Intention of person in command
3. Type of aircraft
4. Nature of emergency
5. Call sign

Transmitted in the order:

- A) 5,4, 2, 3, 1
- B) 5,4,1,2,3
- C) 5,4, 2, 1
- D) 5,4, 3,2, 1

127- A condition of urgency is defined as:

- A. A condition of being threatened by serious and or immediate danger and of requiring immediate assistance.
- B. A condition concerning the safety of an aircraft or other vehicle or of some person on board or within sight and requiring immediate assistance.
- C. A condition requiring immediate assistance.
- D. A condition concerning the safety of an aircraft or other vehicle or of some person on board or within sight, but which does not require immediate assistance.

128- Which is the maximum distance at which you might expect solid VHF contact over flat terrain at FL 100?

- A) About 120 NM
- B) About 300 NM
- C) About 30 NM
- D) About 12 NM

129- The frequency 121,500 MHz is designated as:

- A) An international emergency frequency
- B) A frequency for air-to-air communication
- C) A regional UHF frequency
- D) an airline operation frequency

130- Which phenomena will normally influence the reception of VHF transmission?

- A) terrain elevations and line of sight
- B) The ionosphere.
- C) Electrical discharges as they happen frequently in thunderstorms
- D) Day and night effect.

131- Which is the frequency separation between consecutive frequencies in the VHF band?

- A) 75 kHz
- B) 50 kHz
- C) 25 kHz
- D) 250 kHz

132- Which is the maximum distance at which you might expect solid VHF contact over flat terrain at FL50?

- A) About 8 NM
- B) About 85 NM
- C) About 15 NM
- D) About 150 NM

133- To which frequency bands do the frequencies 118.000 & 136.975 MHz of the Aeronautical Mobile Service belong?

- A) Medium frequency.
- B) Very low frequency.
- C) Low frequency.
- D) Very high frequency.

134- What are the propagation characteristics of VHF?

- A) The waves travel along the surface of the Earth and penetrate into valleys in a way that topographical obstacles have no influence.
- B) The waves are reflected at the ionosphere at the height of about 100 km and reach the earth surface in the form of sky-waves.
- C) Practically straight-line similar to light waves.
- D) Similar to short waves with practically no atmospheric disturbance.

135- Which frequency band contains frequencies of the Aeronautical Mobile Service?

- A) 108.000 – 117.975 MHz
- B) 118.000 – 136.975 MHz
- C) 1810 - 2850 kHz
- D) 11650 -13200 kHz

136- The wavelength of a radio aid is 6.97 cm. The corresponding frequency and frequency band are:

- A) 4304 MHz SHF
- B) 43 MHz VHF
- C) 4304 MHz UHF
- D) 43 GHz EHF

137- What does the term "AIR-GROUND COMMUNICATION" mean?

- A) One-way communication from stations or locations on the surface of the Earth.
- B) One-way communication from aircraft to stations or locations on the surface of the Earth.
- C) Two-way communication between aircraft and stations or locations on the surface of the Earth.
- D) Any communication from aircraft to ground station requiring handling by the Aeronautical Fixed Telecommunication Network (AFTN).

138- What does the term "BROADCAST" mean?

- A) A transmission where no reply is required from the receiving station.
- B) A radiotelephony transmission from ground station to aircraft in flight.
- C) A transmission of information relating to air navigation that is not addressed to a specific station or stations.
- D) A transmission containing meteorological and operational information to aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations.

139- What does the abbreviation SAR mean?

- A) Surveillance airport radar.
- B) Search and rescue.
- C) Standard arrival route.
- D) Secondary altimeter responder.

140- What does the term "CLEARANCE LIMIT" mean?

- A) The time after which air traffic control clearance will be automatically cancelled
- B) The time of expiry of air traffic control clearance.
- C) The time at which aircraft is given an air traffic control clearance.
- D) The point to which aircraft is granted an air traffic control clearance.

141- What does the abbreviation ATIS mean?

- A) Air traffic information service.
- B) Airport terminal information service
- C) Aircraft terminal information service
- D) Automatic terminal information service

142- What does "SELCAL" mean?

- A) A system in which radiotelephony communication between two stations can take place in both directions simultaneously.
- B) A system in which radiotelephony communication can be established between aircraft only
- C) A system which permits the selective calling of individual aircraft over radiotelephone channels linking a ground station with the aircraft.
- D) A system provided for direct exchange of information between air traffic services (ATS) units.

143- What does the abbreviation SSR mean?

- A) Runway visibility report
- B) Search and surveillance radar
- C) Surface strength of runway
- D) Secondary surveillance radar

144- What does the abbreviation IMC mean?

- A) In most cases
- B) Instrument meteorological conditions
- C) International meteorological channel
- D) In meteorological conditions

145- What does the abbreviation AIS mean?

- A) Airport information system.
- B) Aerodrome identification signal area.
- C) Aeronautical information service.
- D) Aerodrome information service.

146- What does the abbreviation MLS mean?

- A) Microwave landing system.
- B) Minimum safe level.
- C) Mean sea level.
- D) Minimum sector level.

147- What does the abbreviation RNAV mean?

- A) Area navigation.
- B) Route navigation.
- C) Radar aided navigation.
- D) Radio navigation.

148- What does H24 mean?

- A) continuously operation
- B) Sunrise to Sunset.
- C) Available 24 hours a day by prior notice only.
- D) Aircraft handling available 24 hours a day.

149- The SELCAL system:

- A) Allows two way VHF data transmission between ATC and aircraft.
- B) Allows two way data transmission between operator and aircraft.
- C) Allows the aircraft to be contacted on VHF and HF frequencies that are not being monitored by the flight crew.
- D) Allows satellite communication.

150- The abbreviation "HN" means the facility described operates:

- A) between sunrise and sunset.
- B) 24 hours a day.
- C) by prior notification.
- D) between sunset and sunrise.

151- QFE is the RTF Q-code to indicate:

- A) The atmospheric pressure corrected to the aircraft cockpit height.
- B) The altimeter sub-scale setting to obtain the flight level reference datum.
- C) The atmospheric pressure at aerodrome elevation (or at runway threshold).
- D) The atmospheric pressure referred to the highest fixed obstacle located on the surface of an aerodrome.

152- In relation to Direction Finding a QDM is:

- A) A true bearing of the aircraft measured from the VDF station.
- B) A magnetic bearing of the aircraft measured from the VDF station.
- C) A true bearing of the aircraft measured to the VDF station
- D) A magnetic bearing to the VDF station.

153- The pressure at the aerodrome reduced to sea level with regard to international standard atmosphere conditions is:

- A) QFE
- B) QFF
- C) QRM
- D) QNH

154- What does the word "CORRECT" mean?

- A) That is true.
- B) Radar contact established.
- C) Listen out on (frequency).
- D) Establish radio contact with ...

155- An aircraft is requested to fly at 2.500 feet on the airfield QFE. All references to vertical position should now be referred to as:

- A) Height
- B) Altitude
- C) Flight level
- D) Pressure Altitude

156- You obtain a clearance to descend to an altitude of 2,500 feet, the clearance should also include the following pressure setting or settings:

- A) QFE
- B) QNH
- C) QFE or QNH
- D) QNE

157- Which Q-code is used to report altitude?

- A) QNH
- B) QFE
- C) QFF
- D) QNE

158- If you are requested to report your height, to which Qcode setting would you refer?

- A) QBI
- B) QNH
- C) QDM
- D) QFE

159- QNH is the Q-code to indicate:

- A) The atmospheric pressure measured at the aerodrome reference point (ARP).
- B) The atmospheric pressure at aerodrome elevation (or at runway threshold).
- C) The altimeter sub-scale setting to obtain elevation when on the ground.
- D) The atmospheric pressure referred to the highest obstacle located on the surface of an aerodrome.

160- Which of the following statements relating to message categories is correct?

- A) The lowest priority message category is meteorological.
- B) Urgency has greatest priority over everything except distress.
- C) Flight safety messages have a higher priority than direction finding messages.
- D) Flight safety messages have a higher priority than medical urgency messages.

161- The ATC message is classified as a:

- A) flight regularity message.
- B) meteorological message.
- C) flight safety message.
- D) urgency message.

162- You receive the following ATC message:

G-ABCD after departure cleared to zone boundary via route Charlie. Climb to altitude 2.000 feet QNH 1010 squawk 6313. This message is:

- A) clearance to takeoff and depart to the zone boundary via route Charlie at 2.000'.
- B) a clearance to line-up
- C) a flight safety message
- D) a flight regularity message

163- A message concerning regular information is:

- A) A flight security message.
- B) An urgency message.
- C) A flight safety message.
- D) A flight regularity message.

164- The order of priority of the following messages in the aeronautical mobile service is:

- A) Distress message, urgency message and direction finding message.
- B) Direction finding message, distress message and urgency message.
- C) Distress message, flight safety message and urgency message.
- D) Meteorological message, direction finding message and flight regularity message.

165- The clearance "CLEARED FOR IMMEDIATE TAKEOFF RUNWAY 03" is:

- A) A flight safety message.
- B) An urgency message.
- C) An unauthorized message.
- D) A flight regularity message.

166- The message addressed to an Area Control Centre "REQUEST RADAR VECTORS TO CIRCUMNAVIGATE ADVERSE WEATHER" is:

- A) A meteorological message.
- B) A flight safety message.
- C) An urgency message.
- D) A message relating to direction finding.

167- A message concerning an aircraft being threatened by grave and imminent danger, requiring immediate assistance is called:

- A) flight safety message
- B) distress message
- C) urgency message
- D) class B message

168- Flight safety messages are:

- A) operation messages concerning non-routine landings
- B) air traffic control messages
- C) messages concerning the safety of an aircraft, a vessel, any other vehicle or a person
- D) messages relating to direction finding

169- The order of priority of the following messages in the aeronautical mobile service is

- A) Flight regularity message, distress message, meteorological message.
- B) Meteorological message, direction finding message, flight safety message.
- C) Flight safety message, meteorological message, flight regularity message.
- D) Flight safety message, direction finding message, urgency message.

170- The priority of the instruction "CLEAR TO LAND" is:

- A) greater than TAXI or TAKE OFF
- B) same as TRANSMIT FOR QDM
- C) lesser than CAUTION, CONSTRUCTION WORK LEFT. OF TAXIWAY.
- D) lesser than CLEARED TO DEPARTURE.

171- The message to an aeronautical ground station "PLEASE CALL A TAXI-CAB FOR US WE WILL ARRIVE AT 1045 AS SCHEDULED" is:

- A) an unauthorized message.
- B) a flight regularity message.
- C) a flight safety messages.
- D) an urgency message.

172- What does the term "BLIND TRANSMISSION" mean?

- A) A transmission where no reply is required from the receiving station.
- B) A transmission of information relating to air navigation that is not addressed to a specific station or stations.
- C) A transmission of messages relating to enroute weather information which may affect the safety of aircraft operations that is not addressed to a specific station or stations.
- D) A transmission from one station to another station in circumstances where two-way communication cannot be established but it is believed that the called station is able to receive the transmission.

173- Aeronautical messages are given an order of priority. Which of the following statements reflects the correct order of priority?

- A) Meteorological messages take precedence over direction finding messages.
- B) Flight safety messages will be handled before urgency messages.
- C) Messages relating to direction finding takes precedence over flight regularity messages.
- D) Flight safety messages take precedence over direction finding messages.

174- Air traffic control messages (clearances, instructions, etc.) belong to the category of:

- A) flight safety message
- B) flight regularity messages
- C) service messages.
- D) class B messages.

175- What is the correct way of spelling out HB-JYC in a radio message?

- A) Hotel Bravo India Yankee Charlie
- B) Hotel Bravo Juliet India Kilo
- C) Hotel Bravo Juliet Yankee Charlie
- D) Hotel Bravo India Victor Charlie

176- What shall the pilot's read back before "CLIMB TO FL280"?

- A) Climbing to flight level two eighty.
- B) Climbing to flight level two eight zero.
- C) Climbing two eight zero.
- D) Climbing to two eighty.

177- What is the correct way of transmitting the number 118.1 to indicate a frequency?

- A) One one eight decimal one.
- B) One eighteen one
- C) One one eight one.
- D) One one eight point one.

178- A Flight Level is:

- A) a height above 3.000 ft..
- B) a surface of constant atmospheric pressure related to a datum of 1013.2 hPa.
- C) a surface of varying atmospheric pressure related to a datum of 1013.2 hPa.
- D) an altitude of constant height related to 1.013,2 hPa.

179- An altitude of 2600 feet is transmitted as:

- A) two thousand six hundred feet.
- B) two six hundred feet.
- C) two six thousand feet.
- D) two six zero zero feet.

180- An aircraft is flying north-east at 2.500 feet. TOWER requests heading and level. What is the correct response?

- A) 045 and 2.500.
- B) Heading north-east at level 25.
- C) Heading 45 at 2.500 feet.
- D) Heading 045 at 2.500 feet.

181- What is the correct way of transmitting 1001 as a QNH?

- A) QNH one double O one.
- B) QNH one zero zero one.
- C) QNH one thousand and one.
- D) QNH one double zero one.

182- During the transmission of numbers containing a decimal point:

- A) the term DECIMAL can be omitted if no chance of misunderstanding exists.
- B) the term DECIMAL can be omitted with friendly ATS units only.
- C) the term DECIMAL must always be transmitted.
- D) the term DECIMAL must be spoken only if followed by three digits.

183- What is the correct way of transmitting the number 3500 when indicating an altitude?

- A) Three five double zero.
- B) Three five zero zero.
- C) Three five hundred.
- D) Three thousand five hundred.

- 184- What is the correct way to transmit and read back frequency 120,375 MHz (VHF channel Separated by 25 kHz)?**
- A) One two zero decimal three seven
 - B) One twenty decimals three seven.
 - C) One two zero decimal three seven five.
 - D) One two zero three seven.
- 185- When indications of time are passed on the RT for position reports, ETAs and EATs, the RTF operators should employ:**
- A) GMT
 - B) UTC
 - C) LMT
 - D) EST
- 186- The time of 1400 UTC is transmitted as:**
- A) one thousand four hundred.
 - B) one four zero zero.
 - C) fourteen hundred UTC.
 - D) one four zero zero uniform tango Charlie.
- 187- A time of 11:20 hours is transmitted as:**
- A) one one two zero or two zero.
 - B) eleven twenty hours.
 - C) eleven twenty.
 - D) twenty past eleven.
- 188- The time is 4:15 PM. What is the correct way of transmitting this time if there is any possibility of confusion about the hour?**
- A) One six one five.
 - B) Four fifteen PM
 - C) Sixteen fifteen.
 - D) Four fifteen in the afternoon.
- 189- The time is 9:20 AM. What is the correct way of transmitting this time if there is no possibility of confusion about the hour?**
- A) Two zero.
 - B) Twenty.
 - C) Two zero this hour.
 - D) Nine twenty AM.
- 190- When transmitting time, which time system shall be used?**
- A) Local time (LT), 24-hour clock.
 - B) Co-ordinated universal time (UTC).
 - C) Local time (LT) AM and PM.
 - D) No specific system, as only the minutes are normally required.

191- What is the consequence of a microphone button stuck on transmit (switched on)?

- A) The frequency cannot be used by others.
- B) Other stations will have to use the WORD TWICE technique.
- C) Readability will improve for all stations
- D) None of above.

192- What is meant by good microphone technique?

- A) Keep the microphone far away since it improves the readability.
- B) Speak very loudly into the microphone.
- C) Use a normal conversation tone, speak clearly and distinctly.
- D) Make large use of hesitation sounds as ER.

193- My message will be more effective and understandable if I:

- A) Speak short and clearly.
- B) Use the words twice method.
- C) Stress the end of message.
- D) Stress every beginning of message.

194- Before transmitting the pilot should:

- A) Make sure that the aircraft is leveled off.
- B) Listen out on the frequency to ensure no interference with another station already transmitting will occur.
- C) Always write the message and read it during the transmission.
- D) Make sure that the emergency frequency is tuned in at the same time.

195- What does the word "CANCEL" mean?

- A) Wait and I will call you.
- B) A change has been made to your last clearance.
- C) Annul the previously transmitted clearance.
- D) Consider that transmission as not sent.

196- What does the phrase "BREAK" mean?

- A) The exchange of transmissions is ended and no response is expected.
- B) It indicates the separation between portions of a message transmitted to an aircraft station.
- C) It indicates the separation between messages transmitted to different aircraft in a very busy environment.
- D) My transmission is ended and I expect a response from you.

197- Which of these phrases is used if you want to communicate a message "CONSIDER THAT TRANSMISSION AS NOT SENT"?

- A) My last transmission is cancelled.
- B) Cancel my last message.
- C) Forget it.
- D) Disregard.

198- What does the word "CONTACT" mean?

- A) That is correct.
- B) Radar contact established.
- C) Listen out on (frequency).
- D) Establish radio contact with ...

199- What does the word "CORRECTION" mean?

- A) That is correct.
- B) An error has been made in this transmission. The correct version is ...
- C) Permission for proposed action not granted.
- D) Negative, the correct version is ...

200- What does the term "EXPECTED APPROACH TIME" mean?

- A) The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding point to complete its approach for a landing.
- B) The holding time over the radio facility from which the instruments approach procedure for a landing will be initiated.
- C) The time at which an arriving aircraft expects to arrive over the appropriate designated navigation aid serving the destination aerodrome.
- D) The time at which an arriving aircraft, upon reaching the radio aid serving the destination aerodrome, will commence the instrument approach procedure for a landing.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	C	26	B	51	A	76	B
2	D	27	C	52	D	77	B
3	B	28	D	53	D	78	C
4	C	29	A	54	A	79	D
5	A	30	B	55	B	80	A
6	A	31	B	56	B	81	C
7	C	32	A	57	A	82	A
8	B	33	B	58	C	83	C
9	C	34	B	59	B	84	D
10	D	35	D	60	C	85	B
11	C	36	A	61	B	86	C
12	B	37	B	62	C	87	D
13	C	38	A	63	A	88	A
14	D	39	C	64	C	89	C
15	B	40	C	65	C	90	C
16	C	41	C	66	C	91	D
17	B	42	B	67	D	92	B
18	D	43	B	68	D	93	D
19	C	44	C	69	A	94	A
20	A	45	A	70	C	95	D
21	B	46	D	71	A	96	D
22	C	47	B	72	D	97	B
23	A	48	C	73	C	98	B
24	D	49	C	74	B	99	D
25	C	50	B	75	D	100	D

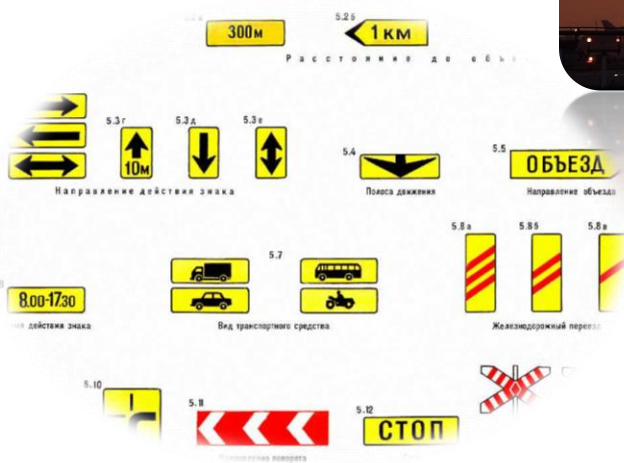
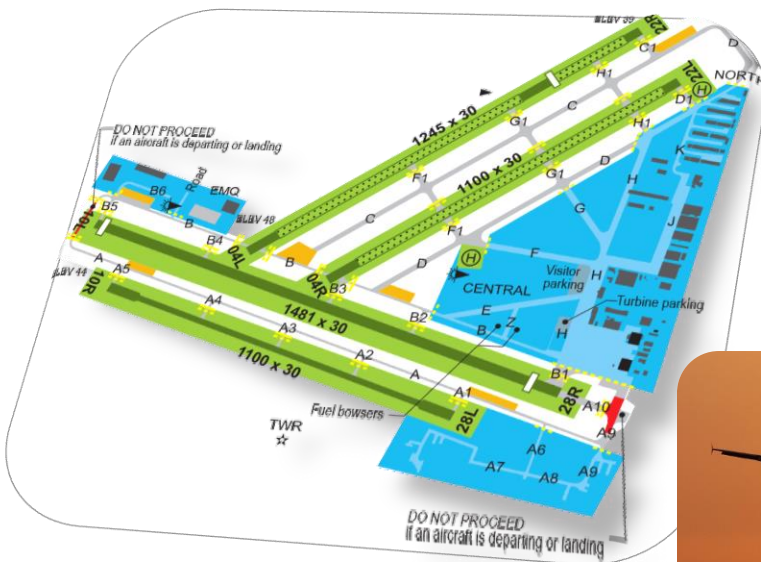
Question	Answer	Question	Answer	Question	Answer	Question	Answer
101	C	126	C	151	C	176	B
102	C	127	D	152	D	177	A
103	C	128	A	153	D	178	B
104	B	129	A	154	A	179	A
105	A	130	A	155	A	180	D
106	D	131	C	156	B	181	B
107	B	132	B	157	A	182	C
108	B	133	D	158	D	183	D
109	C	134	C	159	C	184	A
110	C	135	B	160	B	185	B
111	C	136	A	161	C	186	B
112	B	137	C	162	C	187	A
113	A	138	C	163	D	188	A
114	B	139	B	164	A	189	A
115	D	140	D	165	A	190	B
116	B	141	D	166	B	191	A
117	C	142	C	167	B	192	C
118	C	143	D	168	B	193	A
119	B	144	B	169	C	194	B
120	B	145	C	170	A	195	C
121	D	146	A	171	B	196	B
122	C	147	A	172	D	197	D
123	B	148	A	173	C	198	D
124	D	149	C	174	A	199	B
125	D	150	D	175	C	200	A

Flight Operation Officer Note

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ANNEX 14



1- If a runway is reported as damp, the braking action may be assumed to be:

- A) Excellent.
- B) Acceptable.
- C) Unknown.
- D) Poor.

2- on a wet runway

- A) Extensive standing water is visible.
- B) The surface shows a change of color due to moisture.
- C) Significant patches of standing water are visible.
- D) The surface is soaked but no significant patches of standing water are visible.

3- A runway would not be reported as "flooded" unless:

- A) Significant patches of standing water are visible.
- B) 30% of the runway surface is covered to a depth between 3 mm and 15 mm with water.
- C) Extensive standing water is visible.
- D) 60% of the runway surface is covered by at least 3 mm of water.

4- Which of the following describe the state of the surface of a runway?

- A) Wet; damp; flushed; contaminated.
- B) Contaminated; flooded; damp; wet with water patches.
- C) Dry; wet; water patches; flooded.
- D) Dry; damp; wet; water patches; flooded.

5- In ATIS you receive Information that there are "WATER PATCHES" on the runway. This means that at least _____ of runway is covered with standing water.

- A) 5%
- B) 10%
- C) 25%
- D) 50%

6- The braking action for a specific runway is reported as "0,36". This means the estimated surface friction is:

- A) Poor.
- B) Medium/poor.
- C) Medium/good.
- D) Good.

7- What is a PAPI?

- A) Precision Approach Power Indicator.
- B) Precision Approach Path Indicator.
- C) Precision Approach Power Index.
- D) Precision Approach Path Index.

8- When the surface of a runway is soaked but there is no standing water, the correct term is:

- A) Damp
- B) Wet
- C) Water patches
- D) Flooded

9- Dry snow is snow which:

- A) Has specific gravity over 0,5.
- B) Will fall apart again if compacted by hand.
- C) Will form a snow ball if compacted by hand.
- D) Has a low water content.

10- The “stopway” is a defined rectangular area on the ground at the end of takeoff run available prepared as a suitable area where:

- A) A landing aircraft can be stopped only in emergency.
- B) A landing aircraft can be stopped if overcoming the end of runway.
- C) An aircraft can be stopped in the case of an abandoned takeoff.
- D) An aircraft taking-off or landing can be stopped.

11- “A defined rectangular area on the ground at the end of takeoff run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned takeoff” is the definition for:

- A) Runway strip.
- B) Runway end safety area.
- C) Stopway.
- D) Clearway.

12- “Clearway” is defined rectangular area established to:

- A) Reduce the risk of damage to aircraft running off a runway.
- B) Permit aircraft to make a portion of its initial climb to a specific height.
- C) Protect aircraft during takeoff or landing operations.
- D) Permit the aircraft to stop if it fails the takeoff.

13- A defined rectangular area, selected or prepared as a suitable area over which an airplane may make a portion of its initial climb to a specified height is called:

- A) Clearway.
- B) Stopway.
- C) Takeoff run available (TORA).
- D) Runway end safety area (RESA).

14- Non-precision approach runways and precision approach runways CAT I,II and III are defined as:

- A) Parallel runways.
- B) Movement area.
- C) Instrument runways.
- D) Non-instrument runways.

15- A red square panel with a yellow strip along each diagonal, displayed in the signal area of an aerodrome indicates:

- A) Aerodrome is unfit for aircraft movement, and landings are prohibited.
- B) Exercise special care when landing.
- C) Normal safety service are not available.
- D) Land on paved surface only.

16- A double white cross displayed horizontally in the signal area means:

- A) Special precautions must be observed due to bad state of the taxiways.
- B) Need special precautions while approaching for landing.
- C) An area unit for the movement of aircraft.
- D)The aerodrome is being used by gliders and that glider flights are being performed.

17- The white dumb-bell with black perpendicular bar indicates that:

- A) Landing, takeoff and taxiing is allowed on runway and/or taxiway only.
- B) Taxiing need not be confined to the taxiways.
- C) Glider flying is performed outside the landing area.
- D) This aerodrome is using parallel runways.

18- Two or more white crosses, displayed on runways and taxiways, indicate that:

- A) The threshold has been displaced.
- B) The runway or taxiway should be used in emergency only.
- C) The runway or taxiway should be used with caution.
- D) The section of the runway or taxiway is unfit for aircraft movement

19- A black letter "C" on a yellow background indicates:

- A) Where a visiting pilot should report on arrival.
- B) That glider activity is in progress.
- C) An IFR holding point.
- D) The airfield is unusable.

20- What does a red square with a yellow cross in the signals square indicate?

- A) Takeoff and taxi on the runway and taxiways only.
- B) Takeoff and landings on the runway only but taxiing on the grass permitted.
- C) Aerodrome is unfit for aircraft movements, and landings are prohibited.
- D) Caution - glider flying in progress.

21- Information signs (except location signs) consist of an inscription in _____ on a _____ background.

- A) Red; black
- B) Black; red
- C) Black; yellow
- D) Yellow; black

22- Runway edge lights shall be:

- A) Fixed lights showing variable red.
- B) Fixed lights showing variable white.
- C) Fixed unidirectional lights showing red in the direction of the runway.
- D) Fixed unidirectional lights showing white in the direction of the runway.

23- Runway threshold light shall be:

- A) Fixed unidirectional lights showing white in the direction of approach.
- B) Fixed unidirectional lights showing green in the direction of approach.
- C) Fixed lights green color.
- D) Fixed lights showing green or white colors.

24- Runway threshold wing bar lights shall be fixed unidirectional lights showing _____ in the direction of approach to the runway.

- A) Green.
- B) Red.
- C) White.
- D) Blue.

25- Which of the following group shows the correct designators for three parallel runways seen from the direction of the approach?

- A) 29, 29C, 29.
- B) 29R, 29C, 29L.
- C) 29L, 29, 29R.
- D) 29L, 29C, 29R.

26- The runway edge lights shall be:

- A) Green
- B) Blue
- C) White
- D) Red

27- When taxiing on a surface with white markings, you are rolling on a:

- A) Movement area.
- B) Taxiway.
- C) Clearway.
- D) Runway.

28- Taxiway markings and aircraft stand markings are:

- A) White
- B) Grey
- C) Yellow
- D) Red

29- Taxiway edge lights shall be:

- A) Fixed showing green.
- B) Fixed showing blue.
- C) Fixed showing yellow.
- D) Flashing showing blue.

30- Runway end lights shall be:

- A) Fixed; uni-directional; red.
- B) Fixed; Omni-directional; red.
- C) Fixed; uni-directional; green.
- D) Fixed; Omni-directional; green.

31- What color is taxiway edge lighting?

- A) White
- B) Green
- C) Yellow
- D) Blue

32- Which of the following describes threshold lights?

- A) Red unidirectional.
- B) Green Omni-directional.
- C) Red Omni-directional.
- D) Green unidirectional.

33- What shape is a landing direction indicator?

- A) T
- B) I
- C) V
- D) Y

34- Runway direction is indicated by two digits:

- A) The units are expressed in 10° to the nearest 10° of True North.
- B) The units are expressed in 10° to the nearest 5° of True North.
- C) The units are expressed in 10° to the nearest 10° of the magnetic compass.
- D) The units are expressed in 10° to the nearest 5° of the magnetic compass.

- 35- The color of the fixed, unidirectional runway threshold and wing bar lights shall be:**
- A) Yellow
 - B) White
 - C) Green
 - D) Red
- 36- What is the name for a taxiway connected to a runway at an acute angle designed to allow airplanes to turn off at higher speeds than are achieved on other exits thereby minimizing runway occupancy time?**
- A) Rapid turn off lane.
 - B) High speed exit lane.
 - C) Rapid exit taxiway
 - D) Acute angle exit.
- 37- What color are emergency vehicles painted that are used on the maneuvering area of an aerodrome?**
- A) Green.
 - B) Orange.
 - C) A single conspicuous color, preferably red or yellowish green.
 - D) White and red chequered.
- 38- "TODA" takeoff distance available is:**
- A) The length of the runway available plus the length of clearway available.
 - B) The length of the takeoff run available plus the length of clearway available.
 - C) The length of the takeoff run available plus the length of the stopway and clearway.
 - D) The length of the takeoff run available plus the length of the stop way.
- 39- TODA is defined as:**
- A) TORA plus clearway.
 - B) TORA plus stopway.
 - C) TORA plus EDA.
 - D) TORA plus clearway and stopway.
- 40- The declared takeoff run available at an aerodrome is:**
- A) The takeoff distance available less the stopway.
 - B) The takeoff distance available less the clearway.
 - C) The takeoff distance available less the clearway and the stopway.
 - D) The same as the landing distance available.

41- Regarding declared airfield distances the ASDA is:

- A) The distance from the start of the takeoff run to the end of the clearway.
- B) The distance from the start of the takeoff run to the last point capable of bearing the full weight of the aircraft under normal operating conditions.
- C) The distance from the start of the takeoff run to the end of the stopway.
- D) The area beyond the end of the prepared surface only available to aircraft stopping in an emergency.

42- Takeoff distance available is defined as:

- A) Takeoff run available plus the stop way.
- B) The takeoff run available.
- C) Takeoff run available plus stop way and clearway.
- D) The takeoff run available plus the clearway.

43- "ASDA" (Acceleration Stop Distance Available) is:

- A) The length of the takeoff run available plus the length of stop way (if stopway provided).
- B) The length of the runway plus the length of stop way available (if stopway provided).
- C) The length of the takeoff run available plus the length of stop way and clearway (if provided).
- D) The length of the takeoff run available plus the length of the clearway.

44- Which of the statements below describes the Accelerated Stop Distance Available (ASDA)?

- A) The length of the runway declared available and suitable for the ground run of an airplane taking off.
- B) The length of the runway plus the length of the clearway.
- C) The length of the runway plus the length of the stop way.
- D) The length of the runway declared available and suitable for the ground run of an airplane landing.

45- A slightly high glide slope indication from a precision approach path indicator is

- A) Four white lights.
- B) Three white lights and one red light.
- C) Two white lights and two red lights.
- D) Three red lights and one white light.

46- The numbers 08 and 26 on the approach ends of the runway indicate that the runway is oriented approximately:

- A) 008° and 026° magnetic.
- B) 080° and 260° true.
- C) 080° and 260° magnetic.
- D) 008° and 260° true

47- When approaching taxiway holding lines from the side with the continuous line, the pilot:

- A) May continue taxiing.
- B) Should not cross the lines without ATC clearance.
- C) Should continue taxiing until all parts of the aircraft have crossed the lines.
- D) May continue taxiing if stop bars are switched on.

48- What is the purpose of the runway/runway hold position sign?

- A) Denotes entrance to runway from a taxiway.
- B) Denotes area protected for an aircraft approaching or departing a runway.
- C) Denotes intersecting runways.
- D) A & B are correct.

49- The large "X" s depicted on runway surface denotes that:

- A) Taxiway/Runway holding position marking.
- B) Displaced threshold area
- C) Overrun area
- D) Closed runway

50- The area up to displaced threshold is used for:

- A) Taxiing, takeoff and landing roll out.
- B) Takeoff and landing only.
- C) Landing and taxiing only.
- D) Taxiing, takeoff and landing.

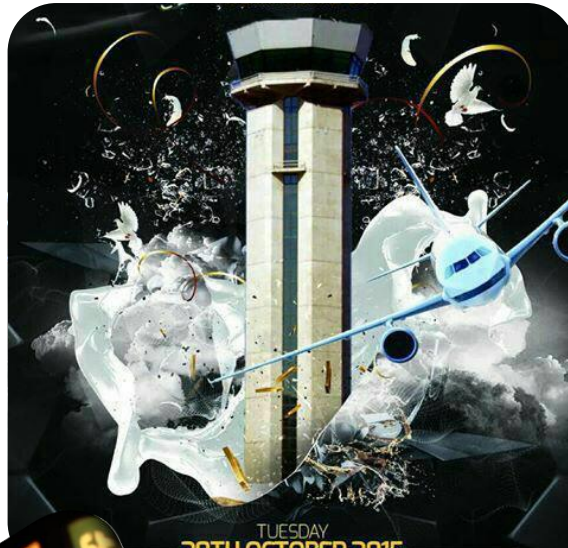
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	16	D	31	D	46	C
2	D	17	B	32	D	47	B
3	C	18	D	33	A	48	C
4	D	19	A	34	C	49	D
5	C	20	C	35	C	50	A
6	C	21	C	36	C		
7	B	22	D	37	C		
8	B	23	B	38	B		
9	B	24	A	39	A		
10	C	25	D	40	B		
11	C	26	C	41	C		
12	B	27	D	42	D		
13	A	28	C	43	A		
14	C	29	B	44	C		
15	A	30	A	45	B		

Flight Operation Officer Note

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DOCUMENT 4444



1- What expression shall be used by a pilot, to cancel its IFR flight?

- A) Now in VMC
- B) Cancelling my IFR flight
- C) Request cancelling
- D) Changing to VFR

2- How many category of airplane specified for the purpose of wake turbulence?

- A) One
- B) Two
- C) Three
- D) Four

3- When the heavy wake turbulence aircraft shall say the word heavy to ATS unit?

- A) Before take-off
- B) Leaving holding
- C) Before landing
- D) at initial contact

4- If designated reporting point is not specified for position report, the first position report shall be made?

- A) 30 minutes after departure
- B) 60 minutes after departure
- C) 45 minutes after departure
- D) None

5- How long which is after the first position report, the next position report shall be made on a route not defined by specified reporting points?

- A) 30 minutes
- B) 45 minutes
- C) 60 minutes
- D) A or B are correct

6- When the speed shall be included in the position report?

- A) All the time
- B) Assigned speed by ATC
- C) During approach
- D) Initial contact

7- Which of the following aircraft may include in its special air report the moderate turbulence?

- A) Transonic
- B) Supersonic
- C) Subsonic
- D) A & B are correct

8- What is the minimum vertical separation below FL 410 in RVSM area?

- A) 2000 FT.
- B) 1000M
- C) 1000 FT.
- D) 2000M

9- Which letter is used in a flight plan to indicate that the flight commences in accordance with VFR and subsequently changes to IFR?

- A) I
- B) Z
- C) V
- D) Y

10- In the event of a delay for an uncontrolled flight which a flight plan has been submitted, the flight plan should be amended or a new flight plan submitted and the old one cancelled, when:

- A) The delay is more than 30 minutes of the estimated time off-blocks.
- B) The delay is more than 60 minutes of the estimated time off-blocks.
- C) The delay is more than 60 minutes of the estimated time of departure.
- D) The delay is more than 30 minutes of the estimated time of departure.

11- Repetitive flight plans (RPLs) shall be used for flights operated regularly on the same day(s) of consecutive weeks and:

- A) On at least 20 days consecutively.
- B) On at least ten occasions or every day over a period of at least 20 consecutive days.
- C) On at least ten occasions or every day over a period of at least ten consecutive days.
- D) On at least 20 occasions.

12- Which letter is used in a flight plan to indicate that the flight commences in accordance with IFR and subsequently changes to VFR?

- A) Y
- B) I
- C) V
- D) Z

13- The planned cruising speed for the first leg or all of the cruising portion of the flight must be entered in the speed box of a flight plan form. This speed is the:

- A) Indicated air speed (IAS).
- B) Estimated ground speed (G/S).
- C) True air speed (TAS).
- D) True air speed at 65% power.

14- A flight plan should be amended or a new flight plan submitted and the old flight plan cancelled in the event of a delay. For controlled flights, this should be done in the event of a delay in excess of:

- A) 30 minutes.
- B) 60 minutes.
- C) 20 minutes.
- D) 45 minutes.

15- When VMC climb may be authorized?

- A) Night
- B) within class C, D, E
- C) Day light
- D) Moon light

16- Within which class of airspace the VMC descend may be authorized?

- A) C
- B) D
- C) E
- D) D and E

17- What Significant change of tail wind component shall be reported to aircraft during approach?

- A) 2 KTS
- B) 5 KTS
- C) 8 KTS
- D) 10 KTS

18- How far from runway edge, an airplane shall be held, if holding marking is not provided and runway length is 2185 meters?

- A) 90 m
- B) 70 m
- C) 50 m
- D) 30 m

19- What SSR code shall be selected by an emergency airplane?

- A) 7500
- B) 7700
- C) 7600
- D) 7400

20- Within which class of airspace the advisory service shall be provided?

- A) C
- B) E
- C) G
- D) F

21) Advisory service is not based on?

- A) Advice
- B) Suggest
- C) Clearance
- D) Information

22- Operation normal may be made between?

- A) 20-30 minutes
- B) 20-40 minutes
- C) 30-40 minutes
- D) 20-50 minutes

23- When a pilot is unable to comply with ATC instruction shall say?

- A) Unable to comply
- B) Unable to follow
- C) Unable
- D) Unable to do

24- The acknowledge of traffic information by pilot may be?

- A) Looking out
- B) Traffic in sight
- C) Negative contact
- D) All

25- What phrases may be used by an airplane if requires visual inspection:

- A) Request low approach
- B) Request low pass
- C) Request low go
- D) Request go around

26- If the intention is to change from IFR to VFR at some point during the flight, the letter _____ is to be inserted in item _____ of the flight plan.

- A) V; 8
- B) Y; 8
- C) X; 6
- D) I; 8

27- What type of operation may be cleared for visual approach?

- A) VFR
- B) IFR
- C) Controlled IFR
- D) Uncontrolled IFR

28- The acknowledgment of missed approaching is:

- A) Missed approach
- B) Going around
- C) Missing approach
- D) Overshooting

29- What is put in" item 8 of a flight plan form if the flight is under VFR?

- A) I
- B) V
- C) Y
- D) Z

30- Who decides whether to fly under IFR or VFR in VMC?

- A) The PIC.
- B) The ATS authority.
- C) The Operator.
- D) Either A or B

31- When, in air space where VFR are permitted, the pilot-in-command of an IFR flight wishes to continue his flight in accordance with visual flight rules, until the destination is reached:

1-Pilot must request "cancelling my IFR flight".

2-VMC must be for reasonable period.

3-The may request his IFR flight plan to be changed to a VFR flight plan.

4-VMC must be uninterrupted.

The correct combination of statements is:

- A) 1,2,4
- B) 1,2,3
- C) 2,3,4
- D) 1,3,4

32- At and below what level, the VMC climb or descent may be authorized?

- A) 5000 Ft.
- B) 3000 Ft.
- C) 10000 Ft.
- D) A&B&C

33- What type of operation may be cleared for visual approach?

- A) IFR
- B) VFR
- C) Controlled flight
- D) controlled IFR

34- The cloud information other than "CB" shall be reported to arriving aircraft where the cloud is?

- A) below 5000 Ft.
- B) below the minimum sector altitude
- C) below the highest minimum sector altitude
- D) "a" or "c" whichever is higher

35- How far from runway edge shall an aircraft hold its position when runway holding position is not marked and the runway length is 1100Ft.?

- A) 30 meter
- B) 50 meter
- C) 90 meter
- D) 45 meter

36- Which of the following information is includes in flight information service?

- A) SIGMET
- B) volcanic activity
- C) Radioactive materials
- D) all answers are correct

37- What is the maximum characters of aircraft identification to be inserted in flight plan?

- A) 5
- B) 6
- C) 7
- D) 8

38- When an aircraft files the flight plan for the various stages and the purpose of intermediate stop, the initial clearance limit will be?

- A) FIR boundary
- B) first destination
- C) Last destination
- D) none

39- Under which condition, an aircraft may be exempted to report its position over compulsory reporting point?

- A) Specified by the operator
- B) specified by the pilot
- C) Specified by the appropriate ATS authority
- D) specified by ATC

40- Change from IFR to VFR will always take place:

- A) When the aircraft is leaving controlled airspace during VMC.
- B) At the clearance limit, irrespective of the weather conditions.
- C) as instructed by an air traffic control unit
- D) During uninterrupted VMC when pilot request "cancelling my IFR flight"

41- If a pilot wishes to cancel an IFR flight plan and proceed under VFR in VMC, he must inform ATC and include the phrase:

- A) Cancelling IFR flight plan.
- B) Cancelling my IFR flight.
- C) Cancelling my flight.
- D) Cancelling IFR.

42- A change from instrument flight rules (IFR) to visual flight rules (VFR) is only acceptable, when VFR is permitted in that air space and when:

- A) ATC invites the PIC to change from IFR to VFR.
- B) The position of the change has been noted on the ATC flight plan. The cancellation of the IFR flight will then be made automatically by ATC.
- C) The PIC has requested and obtained an ATC CLR for the change and has filed a special VFR flight plan.
- D) The change is initiated by the PIC with a message I containing the specific expression "cancelling my IFR flight".

43- Within which class of airspace, the VMC climb or descent may be authorized?

- A) B
- B) C
- C) G
- D) E

44- The area control service shall be provided by.....

- A) Aerodrome control tower
- B) ACC
- C) Approach control unit
- D) INFORMATION

45- Who is responsible to be ensure that before departure, the aircraft has appropriate RNP and RVSM approval for the areas concerned?

- A) ATC
- B) operator
- C) state
- D) pilot

46- For the purpose of wake turbulence, the heavy category aircraft in initial contact shall say the word "HEAVY" to?

- A) Approach
- B) center
- C) tower
- D) ATS units

47- When an aircraft cruising level is called height?

- A) Above transition level
- B) altitude
- C) Above transition altitude
- D) none

48- Which of the following element of position report shall be reported in initial call after changing to a new radio frequency?

- A) Next position
- B) flight level
- C) Altitude
- D) "b" and "c"

49- Which letter is used in a flight plan to indicate that the flight is in under IFR?

- A) Z
- B) Y
- C) V
- D) I

50- Which of the following ATC unit may provide approach control service?

- A) ACC
- B) aerodrome control tower
- C) Approach
- D) all answers are correct

51- What message shall be used by the pilot of a controlled flight when wishes to change its IFR to VFR?

- A) Changing my IFR flight
- B) flying VMC
- C) Uninterrupted VMC
- D) cancelling my IFR flight

52- When an aircraft maintaining a level within transition layer, it is?

- A) Flight level
- B) height
- C) Altitude
- D) all answers are incorrect

53- How long after the first position report, on a route not defined by significant reporting point, the position report shall take place?

- A) Half an hour
- B) one hour
- C) 30 minutes
- D) at least one hour

54- What is the contents of basic ADS report?

- A) Latitude and longitude
- B) level and time
- C) "a" and "b" + figure of merit
- D) none

55- What is the minimum vertical separation, applicable within Tehran FIR above FL 290 (RVSM area)?

- A) 1000 Ft.
- B) 2000 Ft.
- C) 1500 Ft.
- D) 500 Ft.

56- What is the significant change of cross wind component to be reported to an aircraft on the final approach?

- A) 10 kts
- B) 5 kts
- C) 2 kts
- D) none

57- To which type of operation, the advisory service shall be provided?

- A) IFR
- B) VFR
- C) Controlled flight
- D) all

58- Changing of flight rules from IFR to VFR is possible:

- A) If the commander so requests.
- B) If instructed by ATC as long as VMC is forecast during the next 30 minutes.
- C) If instructed by ATC as long as VMC is forecast during the next 60 minutes.
- D) Only when leaving controlled airspace.

59- Who is responsible to submit RPL?

- A) pilot-in-command
- B) dispatcher
- C) FOO
- D) operator

60- When the aircraft has ADS equipment, what letter shall be inserted in flight plan?

- A) N
- B) D
- C) C
- D) S

61- If an uncontrolled VFR operating between point "A" and "B" at 5500 Ft., what characters shall be inserted in flight plan?

- A) A055
- B) F055
- C) VFR
- D) 5500

62- If during the filling flight plan, the total number of person to be carried is unknown, what shall be inserted in flight plan?

- A) crew list
- B) TBN
- C) "a" or "b"
- D) none

63- Which of the following letter shall be inserted in item 10 of flight plan where the transponder is mode "A" (4 digits- 4096 codes) and mode "c"?

- A) A
- B) X
- C) C
- D) P

64- If the cruising speed of an airplane is 430 nautical mile per hour, which of the following characters shall be filled in flight plan?

- A) 430kt
- B) N430
- C) 0430 kt
- D) N0430

65- What characters shall be inserted in flight plan to indicate flight level 95?

- A) F095
- B) FL95
- C) F 95
- D) FL 095

66-How many sections are provided in routine air report?

- A) 1
- B) 2
- C) 3
- D) 4

67- What is the first part of routine air report?

- A) Weather information
- B) operational information
- C) Passengers information
- D) position report

68- What Significant change of head wind component shall be reported to aircraft during approach?

- A) 10 Kts
- B) 5 Kts
- C) 7 Kts
- D) 2 Kts

69- Along which of the following designated ATS routes, RNAV distance- based separation may be applied between RNAV- equipped aircraft?

- A) RNAV route
- B) NDB routes
- C) VOR routes
- D) "a" or "c"

70- When a pilot is unable to comply with ATC instruction, shall transmit?

- A) Unable
- B) unable to comply
- C) Cannot comply
- D) all of the above

71- What is the minimum distance of taxi holding position of a runway with a length above 2500 M, when there is not taxi holding position marking?

- A) 50 M, from runway edge.
- B) 50 M, from runway centerline.
- C) 90 M, from runway edge.
- D) 30 M, from runway center line.

72- When an I.F.R flight wishes to cancel I.F.R Shall say:

- A) Now in VMC.
- B) Canceling I.F.R.
- C) Canceling IMC.
- D) Canceling my I.F.R flight.

73- At least how many alternate Aerodrome shall be specified for an IFR flight in flight plan?

- A) One.
- B) Two.
- C) 1 or 2.
- D) None.

74- When an airplane is at initial approach altitude, what shall be ceiling till the pilot request visual approach?

- A) Equal to initial approach altitude.
- B) Lower than initial approach altitude.
- C) Higher than initial approach altitude.
- D) All above are incorrect.

75- Which of the following aircraft may request visual approach?

- A) VFR.
- B) SVFR.
- C) IFR
- D) CVFR.

76- When VMC, descend may authorize?

- A) Day light
- B) Night.
- C) Heavy traffic.
- D) Emergency.

77- According which of the following basis the advisory service shall not be provide?

- A) Advise.
- B) Clearance.
- C) Suggest.
- D) Traffic information.

78- How long a flight plan for an uncontrolled flight is valid?

- A) 30 min.
- B) 10 min.
- C) 60 min.
- D) 40 min.

79- Advisory service based on:

- A) Suggestion
- B) Advice
- C) Clearance.
- D) A & B & C

80- The flight plan should be amended if ETD is for controlled flight exceed:

- A) One hour.
- B) Two hours.
- C) 30 min.
- D) None.

81- VMC descend or ascend may be authorized during:

- A) Night.
- B) Day light hour.
- C) Sunset and sunrise.
- D) All.

82- Heavy wake turbulence aircraft shall say the word heavy after the call sign in initial contact to:

- A) Approach control unit.
- B) Area control center.
- C) Aerodrome control tower.
- D) Any ATSU

83- Clearance limit is the point which ----- is granted air traffic control clearance:

- A) An aircraft.
- B) Approach.
- C) Passenger.
- D) Clearance

84- When should you contact departure control after takeoff on an IFR flight?

- A) When instructed by tower.
- B) Prior to penetrating clouds.
- C) When established on the assigned heading.
- D) Upon leaving 9000 ft.

85- RPLS shall be submitted only for:

- A) IFR flight for one month.
- B) IFR and VFR flights.
- C) IFR flights operated regularly at least ten consecutive days.
- D) VFR flights operated regularly at least ten consecutive days.

86- The wake turbulence category "HEAVY" is applied to aircraft of (MTOM):

- A) 126.000 lbs or more.
- B) 40.000 lbs or more.
- C) More than 136.000 lbs.
- D) 136.000 kg or more.

87- When should the word "HEAVY" be included as a suffix to the call sign?

- A) On the initial call to ATC if certified MTOM exceeds 100.000- kg.
- B) On the initial call to ATC if certified MTOM exceeds 136.000 kg.
- C) On the initial call to ATC if certified MTOM exceeds 125.000 kg.
- D) On the initial call to ATC if certified MTOM exceeds 200.000 kg.

88- The Takeoff Mass of MEDIUM aircraft is as follows:

- A) Less than 136.000 kg but more than 7.000 kg
- B) Less than 132.000 kg but more than 7.000 kg.
- C) Less than 136.000 kg but more than 9.000 kg.
- D) Less than 132.000 kg but more than 9.000 kg.

89- Aircraft in which wake turbulence category shall include their category immediately after the call sign in the initial radiotelephony contact with the aerodrome control tower or the approach control office prior to departure or arrival?

- A) HEAVY aircraft
- B) MEDIUM aircraft.
- C) MEDIUM and HEAVY aircraft.
- D) MEDIUM, HEAVY and LIGHT aircraft.

90- Cruising level IFR during cruise within controlled air space shall be given as flight level (FL):

- A) Only in airspace class A.
- B) when QNH is higher than the standard pressure 1.013 HPA
- C) above the transition altitude when applicable
- D) if the obstacle clearance is more than 2.000 feet

91- When should ATC pass the QNH to an aircraft?

- A) With clearance to enter the traffic pattern.
- B) At the start of radar vectoring.
- C) In taxi clearance prior takeoff.
- D) Only A and C above are correct.

92- unless instructed otherwise by an air traffic controller, when passing through the transition layer, a pilot shall report the vertical position of the aircraft as:

- A) Either altitude or flight level during a climb.
- B) Flight level in a descent.
- C) Altitude in a climb.
- D) Altitude in a descent.

93- The transition level:

- A) Is published on the approach and landing chart for each aerodrome.
- B) Will be passed to aircraft by ATS units.
- C) Is published on the approach and landing chart for each aerodrome calculated by the Pilot in command.
- D) Is published and updated in the NOTAM.

94- When should position reports be made?

- A) When passing designated significant points referred to as "on request reporting points".
- B) At the discretion of the commander.
- C) When passing each designated compulsory reporting point.
- D) At one hourly intervals.

95-The positions reports shall contain the following elements of information in the order listed:

- A) Aircraft identification, position, time, flight level or altitude, next position and time over and ensuing significant point.
- B) Aircraft identification, position, flight level or altitude, time, next position and time over and ensuing significant point.
- C) Aircraft identification, position, time, true airspeed, flight level or altitude, next position and time over.
- D) Aircraft identification, position, time, flight level or altitude, next position and time over.

96- What is the correct content of a position report?

- A) Aircraft identification; position; FL or alt; time; next position; ETA; ensuing position.
- B) Aircraft identification; time; position; FL or alt; next position; ETA; ensuing position.
- C) Aircraft identification; position; time; FL or alt; next position; ETA; ensuing ETA
- D) Aircraft identification; position; time; FL or alt; next position; ETA; ensuing position

97- What does ACC mean?

- A) Advisory route.
- B) Area control center.
- C) Acknowledge.
- D) Approach control center.

98- What does ADR mean?

- A) Advisory route.
- B) Aerodrome.
- C) Advisory distress route.
- D) Altitude dead reckoning.

99- A control area or portion thereof established in the form of a corridor equipped with radio navigation aids is also known as:

- A) A Terminal Maneuvering Area.
- B) An upper air route.
- C) An airway.
- D) A SVFR entry/exit corridor.

100-What is the objective of the alerting service?

- A) To prevent collisions between aircraft.
- B) To provide the advisory service.
- C) To notify appropriate organizations regarding aircraft in need of assistance.
- D) Provide advice and information useful to the safe and efficient conduct of flights.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	36	D	71	A		
2	C	37	C	72	D		
3	D	38	B	73	B		
4	A	39	D	74	D		
5	C	40	D	75	C		
6	B	41	B	76	A		
7	D	42	D	77	B		
8	C	43	D	78	C		
9	B	44	B	79	D		
10	B	45	B	80	C		
11	C	46	D	81	B		
12	A	47	D	82	D		
13	C	48	D	83	A		
14	A	49	D	84	A		
15	C	50	D	85	C		
16	D	51	D	86	D		
17	A	52	D	87	B		
18	C	53	B	88	A		
19	B	54	C	89	A		
20	D	55	A	90	C		
21	C	56	B	91	D		
22	B	57	A	92	D		
23	C	58	A	93	B		
24	D	59	D	94	C		
25	B	60	B	95	A		
26	B	61	C	96	D		
27	C	62	B	97	B		
28	B	63	C	98	A		
29	B	64	D	99	C		
30	A	65	A	100	C		
31	A	66	C				
32	D	67	D				
33	D	68	A				
34	D	69	D				
35	A	70	A				

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

FLIGHT PLANNING



1- Given:

True course (TC): 017°
Wind: 160°/25 kts
True airspeed (TAS): 180 kts

Find wind correction angle (WCA) and ground speed (GS):

- A) WCA -5°, GS 199 kts.
- B) WCA +5°, GS 161 kts,
- C) WCA +5°, GS 199 kts.
- D) WCA +5°, GS 161 kts.

2- An aircraft is flying at an indicated pressure altitude of 5000 ft.. where the OAT is -10°C. What is the aircraft's true altitude?

- A) 4700 ft.
- B) 5260 ft.
- C) 5120 ft.
- D) 4600 ft.

3- Given:

Variation: 15°E
Deviation: 6°W
Heading: 080° (T)

Determine aircraft's compass and magnetic headings:

- A) 071,065
- B) 065,071
- C) 086,095
- D) 095,086

4-The measured course 042° T.

The variation in the area is 6°W and the wind is calm. The deviation is 4°W

In order to follow this course, the pilot must fly a compass heading of:

- A) 040 °
- B) 044°
- C) 052 °
- D) 058 °

5-Given:

True course: 017°
W/V: 340°/30
TAS: 420 kts

Find:

1) The wind correction angle (WCA)

2) The ground speed (G/S)

- A) (1) +2°;(2) 416 kts,
- B) (1) +2°;(2) 396 kts.
- C) (1)-2°; (2) 426 kts.
- D) (1)-2°; (2) 396 kts.

6-Given:

Variation: 12°W

Deviation: 3°E

Heading: 180° (T)

Determine aircraft's compass and magnetic headings:

- A) 168, 171
- B) 168, 165
- C) 192, 189
- D) 189, 192

(Refer to figure F-14)

7-The planned flight is over a distance of 440 NM. Based on the wind charts at altitude the following components are found:

FL050: -30 kts

FL100: -50 kts

FL 180: -70 kts

The Operations Manual in appendix details the aircraft performances. Which of the following flight levels gives the best range performance?

- A) FL050
- B) Either FL050 or FL100
- C) FL180
- D) FL100

(Refer to figure F-15)

8-Finish the endurance / fuel calculations and determine ATC endurance for a twin jet airplane, with the help of the table provided. Contingency is 5% of the planned Trip Fuel and fuel flow for extra fuel is 2.400 kg/hrs.

- A) ATC endurance: 04:07
- B) ATC endurance: 03:52
- C) ATC endurance: 03:37
- D) ATC endurance: 04:12

(Refer to figure F-02)

9-What is the fuel, time and distance to climb from an aerodrome at sea level up to FL 100 where the outside air temperature is 0°C?

- A) 13 USG, 24 min, 45 NM.
- B) 9 U8G, 16 min, 28 NM.
- C) 9 USG, 14 min, 27 NM.
- D) 5 USG, 10 min, 16 NM.

(Refer to figure F-04)

10-At 6000 ft. what is the range of the aircraft at full throttle with 2.500 RPM set?

- A) 840 NAM
- B) 872 NAM
- C) 914 NAM
- D) 756 NAM

(Refer to figure F-06)

11-A flight is to be made in a multi-engine piston airplane. The cruising level will be 11000 ft. The outside air temperature at FL is -15 °C. The usable fuel is 123 US gallons. The power is set to economic cruise. Find the range in NM with 45 min reserve fuel at 45% power.

- A) 752 NM
- B) 852 NM
- C) 610 NM
- D) 602 NM

(Refer to figure F-05)

12-Using the following information, calculate the range. Given:

Airplane mass at start up:	3663 lbs
Fuel load (density 6lbs/gal):	74 gal
Takeoff altitude:	sea level
Headwind:	40 kts
Cruise altitude:	8000 ft.
Power setting:	full throttle 2300 RPM 20 °c lean of peak

- A) 633 NM
- B) 844 NM
- C) 730 NM
- D) 547.5 NM

(Refer to figure F-03)

13- A flight is to be made from one airport (elevation 3000 ft.) to another in a multi-engine piston airplane. The cruising level will be FL 110. The temperature at FL 110 is ISA -10°C. The temperature at the departure aerodrome is -1°C. Calculate the fuel to climb with mixture rich.

- A) 10 US gallons.
- B) 7 US gallons.
- C) 12 US gallons.
- D) 3 US gallons.

(Refer to figure F-07)

14- For a flight departing from MSL at 3663 lbs, cruising at FL80 at 2300 RPM, 20°C lean of peak EGT, in 40 kts headwind, calculate endurance:

- A) 4.75 hrs.
- B) 5.3 hrs.
- C) 6.1 hrs.
- D) 6.55 hrs.

(Refer to figure F-09)

15- A flight is to be made to an airport, pressure altitude 3000 ft., in a multi-engine piston airplane. The forecast OAT for the airport is -1°C. The cruising level will be FL 110, where OAT is -10°C. Calculate the still air descent distance for:

- 145 KIAS
 - Rate of descent 1000 ft./min
 - Gear and flaps up
- A) 25 NM
 - B) 29 NM
 - C) 36 NM
 - D) 20 NM

16- You are required to uplift. 40 US Gallons of AVGAS with specific gravity of 0.72. How many liters and kilograms is this?

- A) 109 liters, 151 kg.
- B) 182 liters, 131 kg.
- C) 182 liters, 289 kg.
- D) 151 liters, 109 kg.

(Refer to figure F-10)

17- For the Multiengine Piston Airplane, if the OAT is -20°C at 19000 ft., the TAS at long-range power setting is:

- A) 159 knots
- B) 162 knots
- C) 165 knots
- D) 168 knots

(Refer to figure F-01)

18- Given:

FL75

OAT: +5 °C

During climb: average headwind component 20 kts

Takeoff from MSL with the initial mass of 3650 lbs.

Find the still air distance (NAM) and ground distance (NM) using the graph TIME, FUEL, DISTANCE TO CLIMB:

- A) 18 NAM, 15 NM.
- B) 16 NAM, 18 NM.
- C) 18 NAM, 13 NM.
- D) 14 NAM, 18 NM.

(Refer to figure F-13)

19- On a standard day what is the TAS and fuel flow in USG at 10000 ft.?

- A) 157 kts, 11.0 GPH.
- B) 137 kts, 66.2 GPH.
- C) 157 kts, 20.7 GPH.
- D) 157 kts, 11.4 GPH.

(Refer to figure F-11)

20- Given:

- **FL75**
- **OAT +10 °C**
- **23.0 in.Hg (or full throttle) at 2300 RPM**

Find the fuel flow in gallons per hour (GPH) and TAS.

- A) 71.1 GPH, 143 kts.
- B) 11.6 GPH, 143 kts.
- C) 11.7 GPH, 160 kts.
- D) 68.5 GPH, 160 kts.

21- When calculating the fuel required to carry out a given flight, one must take into account:

- 1. the wind**
 - 2. foreseeable airborne delays**
 - 3. other weather forecasts**
 - 4. any foreseeable conditions which may delay landing**
- The combination which provides the correct statement is:**

- A) 1,2,3
- B) 1,3
- C) 2,4
- D) 1,2,3,4

(Refer to figure F-08)

22- Given the following data:

FL75

Lean mixture

Economy Power setting

Find the endurance with no reserve:

- A) 04:30
- B) 05:01
- C) 06:12
- D) 05:11

23- The Final Reserve Fuel for aircraft with piston engines should be:

- A) fuel to fly for 30 minutes.
- B) fuel to fly for 60 minutes.
- C) fuel to fly for 45 minutes.
- D) 5 minutes' fuel at the holding speed at 1.500 ft. above the aerodrome in standard conditions.

24- Given:

Dry Operating Mass (DOM): 33510 kg

Alternate fuel: 1100 kg

Contingency fuel: 5% of Trip Fuel

If the flight is performed as planned, which of the listed estimated masses is correct?

- A) Estimated Takeoff Mass is 45233 kg.
- B) Estimated Landing Mass at destination is 43295 kg.
- C) Estimated Landing Mass at destination is 43193 kg.
- D) Estimated Landing Mass at alternate is 42093 kg.

(Refer to figure F-16)

25- A flight has to be made with a multi-engine piston airplane. For the fuel calculations take 5 US gallons for the taxi, and an additional 13 minutes at cruise condition to account for climb and descent. Calculated time overhead to overhead is 2 hrs 37 min.

- **Power setting is 65%, 2500 RPM**
- **Calculated reserve fuel is 30% of the Trip Fuel**
- **FL120, OAT is 1°C**

Find the minimum Block Fuel:

- A) 91 US gallons.
- B) 86 US gallons.
- C) 76 US gallons.
- D) 118 US gallons.

26- For a planned flight the calculated fuel is as follows:

Flight time: 02:42 min

Taxi fuel: 9 kg

Block Fuel: 136 kg

The reserve fuel, at any time, should not be less than 30% of the remaining Trip Fuel.

How much fuel should remain after 1 hr. 30 min of flight time?

- A) 54 kg Trip Fuel and 16 kg reserve fuel.
- B) 33 kg Trip Fuel and 10 kg reserve fuel.
- C) 25 kg Trip Fuel and 8 kg reserve fuel.
- D) 43 kg Trip Fuel and 13 kg reserve fuel.

27- In a flight plan when the destination aerodrome is A and the alternate aerodrome is B, the final reserve fuel for a turbojet engine airplane corresponds to:

- A) 15 minutes holding 2000 feet above aerodrome A.
- B) 30 minutes holding 2000 feet above aerodrome B.
- C) 30 minutes holding 1500 feet above aerodrome B.
- D) 30 minutes holding 1500 feet above aerodrome A.

28- A jet airplane is to fly from A to B. The minimum final reserve fuel must allow for:

- A) 20 minutes hold over alternate airfield.
- B) 30 minutes hold at 1500 ft. above destination aerodrome elevation, when no alternate is required.
- C) 30 minutes hold at 1500 ft. above mean sea level.
- D) 15 minutes hold at 1500 ft. above destination aerodrome elevation.

29- The required time for final reserve fuel for turbojet airplane is:

- A) 45 min.
- B) 30 min.
- C) 60 min.
- D) Variable with wind velocity.

(Refer to figure F-12)

30- A flight has to be made with a single engine airplane. For the fuel calculation allow:

- 10 lbs fuel for startup and taxi
- 3 minutes and 1 gallon of additional fuel to allow
- for the climb
- 10 minutes and no fuel correction for the descent
- Planned flight time (takeoff to landing) is 3 hrs. and 12 minutes
- Reserve fuel 30% of the Trip Fuel
- Power setting is 25 in.Hg (or full throttle), 2.100 RPM, 20°C lean
- FL70 and the OAT is 10°C The Minimum Block Fuel is:

- A) 280 lbs
- B) 268 lbs
- C) 252 lbs
- D) 215 lbs

(Refer to figure F-17)

31- Given:

Dry Operating Mass (DOM):	33500 kg
Load:	7600 kg
Maximum Allowable Takeoff Mass:	66200 kg
Standard taxi fuel:	200 kg
Tank capacity:	16100 kg

The maximum possible takeoff fuel is:

- A) 15900 kg
- B) 25300 kg
- C) 16300 kg
- D) 17300 kg

32- For a planned flight the calculated fuel is as follows:

Flight time:	2 hrs 42 min
Block Fuel:	136 kg
Taxi fuel:	9 kg

The reserve fuel, at any time, should be not less than 30% of Trip Fuel remaining.

How many kg of fuel should remain after 2 hrs. of flight?

- A) 33 kg trip and 10 kg reserve.
- B) 25 kg trip and 8 kg reserve.
- C) 23 kg trip and 10 kg reserve.
- D) 33 kg trip and no reserve.

(Refer to figure F-18)

33- A flight has to be made with the single engine airplane. For the fuel calculation allow:

- 10 lbs fuel for startup and taxi
- 3 minutes and 1 gallon of additional fuel to allow for the climb
- 10 minutes and no fuel correction for the descent
- Planned flight time (takeoff to landing) is 2 hrs. and 37 minutes
- Reserve fuel 30% of the Trip Fuel
- Power setting is 23 inHg (or full throttle), 2300 RPM, 20°C lean
- FL 50 and the OAT is -5°C The Minimum Block Fuel Is:

- A) 250 lbs
- B) 208 lbs
- C) 270 lbs
- D) 260 lbs

(Refer to figure F-11)

34- For a flight of 1900 NM the following conditions apply:

Headwind component:	10 kts
Temperature:	ISA -5°C
Trip Fuel available:	15000 kg
Landing Mass:	50000 kg

What is the minimum cruise level (pressure altitude) which may be planned?

- A) 17000 ft.
- B) 10000 ft.
- C) 14000 ft.
- D) 22000 ft.

35- A multi-engine piston airplane is on an IFR flight. The fuel plan gives a Trip Fuel of 65 US gallons. The alternate fuel, final reserve included, is 17 US gallons. Contingency fuel is 5% of the Trip Fuel. The usable fuel at departure is 93 US gallons. At a certain moment the fuel consumed according to the fuel gauges is 40 US gallons and the distance flown is half of the total distance. Assume that fuel consumption does not change. Which statement is right?

- A) At the destination there will still be 30 US gallons in the tanks.
- B) The remaining fuel is not sufficient to reach the destination with reserves intact.
- C) At departure the reserve fuel was 28 US gallons.
- D) At destination the required reserves remain intact.

36- A descent is planned from FL340 ft. so as to arrive at FL100 at a distance 6 NM from a VORTAC. With a GS of 280 kts and a rate of descent of 1200 ft./min. The distance from the VORTAC when descent is started is:

- A) 65 NM
- B) 99 NM
- C) 27 NM
- D) 93 NM

37- ATC require a descent from FL270 to FL160 to be level 6 NM before a VOR. If rate of descent is 800 feet per minute, mean groundspeed is 256 kts, how far out from the VOR must descent be started?

- A) 59 NM
- B) 65 NM
- C) 144 NM
- D) 150 NM

38- During an IFR flight in a Beech Bonanza the fuel indicators show that the remaining amount of fuel is 100lbs after 38 minutes. The total takeoff fuel at departure was 160 lbs. For the alternate fuel, 30 lbs is necessary. Final reserve fuel is estimated at 50 lbs. If the fuel flow remains the same, how many minutes can be flown to the destination with the remaining fuel?

- A) 12 minutes.
- B) 63 minutes.
- C) 44 minutes.
- D) 4 minutes.

39- An aircraft flight planning chart states that the time to reach FL190 at a given gross mass is 22 minutes with a still air distance of 66 NM. The ground distance travelled when the average headwind component is 35 kts will be:

- A) 53 NM
- B) 61 NM
- C) 79 NM
- D) 85 NM

40- How many feet you have to climb to reach FL75?

Given:

Departure aerodrome elevation: 1500 ft.

QNH: 1023 hPa

Temperature: ISA

(Assume 1 hPa is 30 ft.)

- A) 6300 ft.
- B) 6000 ft.
- C) 6600 ft.
- D) 7800 ft.

41- An aircraft takes 14 minutes to climb to FL290 covering 71 NAM, what is the ground distanced covered in a 30 kts headwind?

- A) 71 NGM
- B) 57 NGM
- C) 78 NGM
- D) 64 NGM

42- A sector distance is 450 NM long. The TAS is 460 kts. The wind component is 50 kts tailwind. What is the still air distance?

- A) 414 Nautical Air Miles (NAM).
- B) 499 Nautical Air Miles (NAM).
- C) 406 Nautical Air Miles (NAM).
- D) 511 Nautical Air Miles (NAM).

43- An aircraft is in cruising flight at FL095 and TAS 155 kts. The pilot intends to descend at 500 ft. /min to arrive overhead the MAN VOR at 2000 ft. (QNH 1030 hPa). The TAS remains constant in the descent, wind is negligible, temperature standard. At which distance from MAN should the pilot commence the descent?

- A) 41 NM
- B) 48 NM
- C) 38 NM
- D) 45 NM

44- A VFR flight in Piper SENECA III. At a fuel check you have 60 US gallons (USG) of usable fuel remaining. Alternate fuel required is 12 USG. The flight time remaining is 1 hr. 35 min. What is the highest consumption rate acceptable?

- A) 33.0 USG/hr.
- B) 37.9 USG/hr.
- C) 30.3 USG/hr.
- D) 21.3 USG/hr.

45- Given CAS/RAS of 130 kts, OAT 0° C at 10000 ft, trip distance of 240 NM, track 275° (T) and W/V 030/30 kts. What is your true heading and time enroute?

- A) 287° and 103 minutes.
- B) 287° and 95 minutes.
- C) 285° and 95 minutes.
- D) 285° and 88 minutes.

46- You are flying a constant compass heading of 252° Variation is 22°E, deviation is 3°W and your INS is showing a drift. of 9° to the right. True track is?

- A) 242°
- B) 262°
- C) 280°
- D) 224°

47- After flying for 16 min at 100 kts TAS with a 20 kts tailwind component, you have to return to the airfield of departure. You will arrive after:

- A) 20 min.
- B) 24 min
- C) 10 min 40 sec.
- D) 16 min.

48- An airplane flies at an airspeed of 380 kts, It flies from A to B and back to A. Distance AB = 480 NM. When going from A to B, it experiences a headwind component = 60 kts. The wind remains constant. The duration of the flight will be:

- A) 3 hrs. 00 min
- B) 2 hrs. 35 min
- C) 2 hrs. 10 min
- D) 2 hrs. 32 min

49-Flight planning chart for an airplane states, that the time to reach the cruising level at a given gross mass is 36 minutes and the distance travelled is 157 NM (zero wind). What will be the distance travelled with an average tailwind component of 60 kts?

- A) 193 NM
- B) 128 NM
- C) 157 NM
- D) 228 NM

50-In the cruise at FL155 at 260 kts TAS, the pilot plans for a 500 ft./min descent in order to fly overhead MAN VOR at 2000 feet (QNH 1030). TAS will remain constant during descent, wind is negligible, and temperature is standard. The pilot must start the descent at a distance from MAN VOR:

- A) 140 NM
- B) 120 NM
- C) 110 NM
- D) 130 NM

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	C	16	D	31	A	46	C
2	A	17	A	32	B	47	B
3	A	18	A	33	D	48	B
4	C	19	A	34	A	49	A
5	D	20	C	35	B	50	B
6	D	21	D	36	B		
7	C	22	B	37	B		
8	A	23	C	38	A		
9	B	24	B	39	A		
10	D	25	A	40	A		
11	A	26	D	41	D		
12	A	27	C	42	C		
13	B	28	B	43	A		
14	B	29	B	44	C		
15	D	30	A	45	D		

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

GENERAL NAVIGATION



NOV 2016

1- What is your density altitude if your altimeter indicates 20,000 feet (QNE set) and the outside air temperature is -27°C?

- A) 19,700 feet
- B) 19,000 feet
- C) 20,500 feet
- D) 21,000 feet

2- Determine the approximate CAS you should use to obtain TAS at 180 knots, with 8,000 ft. pressure altitude, and + 4°C outside air temperature:

- A) 160 knots
- B) 158 knots
- C) 162 knots
- D) 164 knots

3- What calibrated air speed is required to obtain TAS at 170 knots, with 11,500 ft. pressure altitude and temperature of -8°C?

- A) 143 knots
- B) 151 knots
- C) 148 knots
- D) 145 knots

4- Given:

Indicated altitude 7,000 ft..

OAT+20 °C

P.A 7,000ft.

Based on these conditions what is the true altitude?

- A) 7,475ft.
- B) 7,275ft.
- C) 6,775ft.
- D) 6,550ft.

5- Given:

True course 095°

True heading 075°

True airspeed 90kts

Groundspeed 77kts

Determine the wind direction and speed

- A) 020° and 32kts
- B) 030° and 38kts
- C) 200° and 32kts
- D) 330° and 31kts

6- 131 US Gallon islitters

- A) 485
- B) 458
- C) 495
- D) 480

7- How long does it take if you want to travel 520 NM at 184 kts ground speed?

- A) 02:50 min
- B) 02:46 min
- C) 02:43 min
- D) 02:54 min

8- What would be the density altitude with pressure altitude of 20,000ft. and OAT of - 40°C?

- A) 18,000 ft.
- B) 20,000 ft.
- C) 21,000 ft.
- D) 19,000 ft.

9- Find TH & GS, if:

TC: 222°

TAS: 198 kts

W/V: 154°/38 kts

- A) TH:212°, G/S:188 kts
- B) TH:212°, G/S:181 kts
- C) TH:184°, G/S:212 kts
- D) TH:181°, G/S:212 kts

10- With the parameters of pressure altitude 16,000 ft. calibrated airspeed 290 kts and indicated air temperature 20°C what would be the true airspeed?

- A) 367 kts
- B) 360 kts
- C) 377 kts
- D) 385 kts

11- Runway 30 is being used for landing. Which surface wind would exceed the airplane's crosswind capability of 0.2 V_{so} if V_{so} is 60 knots?

- A) 260° at 10 knots
- B) 275° at 25 knots
- C) 315° at 35 knots
- D) 320° at 40 knots

12- If the reported surface wind is 010° at 18 knots what is the crosswind component for RUNWAY08 during landing?

- A) 7 knots
- B) 15 knots
- C) 17 knots
- D) 21 knots

13- The surface wind is 180° at 25 knots. What is the crosswind component for RUNWAY13 during landing?

- A) 25 knots
- B) 22 knots
- C) 21 knots
- D) 19 knots

14- TAS: 95 kts, G/S:87 kts, TC:105°, TH:85°, Find wind direction and velocity

- A) 020°, 32 kts
- B) 032°, 20 kts
- C) 038°, 20 kts
- D) 020°, 39 kts

15- Given:

True course 015°

True heading 025°

True airspeed 105 kts

Groundspeed 125 kts

Determine the wind direction and speed.

- A) 020° and 32 knots.
- B) 300° and 38 knots.
- C) 200° and 32 knots.
- D) 155° and 28 knots.

16- Given:

PA 6,000 ft.

OAT 30°C

Find the Density Altitude:

- A) 9,000 ft.
- B) 8,000ft.
- C) 6,000 ft.
- D) 4,000 ft.

17-Given:

P.A 10,000 ft.

OAT -13 °C

Calibrated Altitude 12,000 ft.

Find the True Altitude:

- A) 14,000 ft.
- B) 11,600 ft.
- C) 10,000 ft.
- D) 13,000 ft.

18- Given:

P.A 10,000 ft.

OAT -20 °C

Calibrated Altitude 12,000 ft.

Altitude of ground station 5,400 ft.

Find True Altitude:

- A) 9,000 ft.
- B) 10,000 ft.
- C) 11,300 ft.
- D) 12,500 ft.

19-Given:

Calibrated Air Speed 220 kts

P.A 20,000 ft.

Indicated Air Temperature -30°C

CT= 0.8

Find True Air Speed (Kts) :

- A) 350
- B) 400
- C) 100
- D) 288

20- Given:

Calibrated Air Speed 650 kts

P.A 24,000 ft.

Indicated Air Temperature -20°C

Find True Air Speed (Kts):

- A) 650
- B) 900
- C) 850
- D) 755

21- Given:

P.A **12,500 ft.**

Indicated Air Temperature **-20°C**

True Air Speed 288 kts

Find Calibrated Air Speed(Kts) :

- A) 350
- B) 400
- C) 250
- D) 195

22-Given:

P.A **5,000 ft.**

Ambient Air Temperature **-20°C**

Find Density Altitude:

- A) 1,000 ft.
- B) 2,000 ft.
- C) 3,000 ft.
- D) 3,500 ft.

23-Given:

P.A **3,000 ft.**

Static Air Temperature **20°C**

Calibrated Altitude **4,000 ft.**

Altitude of ground station **1,060 ft.**

Find True Altitude:

- A) 4,160 ft.
- B) 5,110 ft.
- C) 3,500 ft.
- D) 2,830 ft.

24- Given:

Calibrated Air Speed **190 kts**

P.A **8,500 ft.**

Indicated Air Temperature **5°C**

Find True Air Speed:

- A) 216
- B) 100
- C) 316
- D) 400

25- Given:

Calibrated Air Speed **390 kts**
P.A **30,000 ft.**
Indicated Air Temperature **15°C**

Find True Air Speed:

- A) 530
- B) 605
- C) 700
- D) 470

26- Given:

True Air Speed **350 kts**
Indicated Air Temperature **-20°C**
P.A **15,000 ft.**

Find Calibrated Air Speed:

- A) 196
- B) 296
- C) 396
- D) 496

27-Given:

P.A **21,000 ft.**
True Air Temperature **-30°C**

Find Density Altitude:

- A) 19,000 ft.
- B) 20,500 ft.
- C) 25,000 ft.
- D) 30,500 ft.

28- Given:

Calibrated Air Speed **300 kts**
P.A **20,000 ft.**
Indicated Air Temperature **0°C**

Recovery Coefficient 0.8

Find True Air Temperature:

- A) +17.6 °C
- B) -30 °C
- C) -17.6 °C
- D) +30 °C

29-Given:

P.A 5,000 ft.
Calibrated Air Speed 395 kts

Find Mach Number:

- A) 0.65
- B) 0.50
- C) 0.85
- D) 0.76

30- Given:

Indicated Mach Number 1.16
Indicated Air Temperature 10°C

Find True Air Speed:

- A) 590
- B) 790
- C) 490
- D)675

31- Given:

Calibrated Air Speed 230 kts
P.A 13,000 ft.
True Air Temperature -20°C

Find True Air Speed:

- A) 100
- B) 400
- C) 372
- D) 272

32-Given:

P.A 12,500 ft.
OAT -20°C
TAS 288 kts

Find CAS (kts):

- A) 151
- B) 400
- C) 245
- D)351

33-Given:

TAS 172 kts
IAT 10°C

Find OAT:

- A) +16 °C
- B) +6 °C
- C) -6 °C
- D) -16 °C

34- Given:

P.A 6,000 ft.
IAT 10°C
CAS 140 kts

Find OAT:

- A) +7 °C
- B) -7 °C
- C) +21 °C
- D) -21 °C

35-Given:

P.A 27,000 ft.
CAS 415 kts

Find Mach number:

- A) 1.90
- B) 1.00
- C) 0.16
- D) 0.40

36- Given:

Indicated Mach Number 1.0
Indicated Air Temperature 60°C

Find True Air Speed:

- A) 550
- B) 450
- C) 650
- D) 750

37- Given:

P.A 14,000 ft.
CAS 450 kts
OAT -5°C

Find TAS:

- A) 400
- B) 464
- C) 547
- D) 666

38- Given:

P.A 21,000 ft.
CAS 270 kts
OAT -15°C

Find TAS:

- A) 585
- B) 450
- C) 375
- D) 650

39- Given:

P.A 12,000 ft.
True Air Temperature 0°C

Find Density Altitude:

- A) 13,000 ft.
- B) 14,000 ft.
- C) 11,000 ft.
- D) 12,000 ft.

40- Given:

P.A 16,000 ft.
True Air Temperature -10°C
Calibrated Altitude 15,000 ft.

Find True Altitude:

- A) 16,400 ft.
- B) 15,400 ft.
- C) 14,000 ft.
- D) 13,000 ft.

41- Given:

P.A	4,000 ft.
Static Air Temperature	10°C
Calibrated Altitude	4,300 ft.
Altitude of ground station	1,000 ft.

Find True Altitude:

- A) 2,350 ft.
- B) 3,350 ft.
- C) 4,350 ft.
- D) 5,350 ft.

42- Given:

True Air Speed	230 kts
Indicated Air Temperature	15°C
P.A	10,000 ft.

Find Calibrated Air Speed:

- A) 184
- B) 214
- C) 164
- D) 194

43- Given:

Calibrated Air Speed	410 kts
P.A	22,000 ft.
Indicated Air Temperature	20°C
CT= 1.0	

Find True Air Speed:

- A) 764
- B) 462
- C) 664
- D) 561

44- Given:

Calibrated Air Speed	180 kts
Indicated Air Temperature	-10°C
P.A	5,000 ft.

Find True Air Speed:

- A) 176
- B) 296
- C) 186
- D) 396

45- Given:

P.A 5,000 ft.
Ram air Temperature 27°C

Find Density Altitude:

- A) 6,500 ft.
- B) 7,500 ft.
- C) 8,500 ft.
- D) 9,500 ft.

46- Given:

P.A 12,500 ft.
Actual Air Temperature -2°C

Calibrated Altitude 12,000 ft.

Altitude of ground station unknown

Find True Altitude:

- A) 12,400 ft.
- B) 13,400 ft.
- C) 11,400 ft.
- D) 14,400 ft.

47- Given:

P.A 3,000 ft.
Indicated Air Temperature 30°C

Calibrated Air Speed 125 MPH

Find True Air Speed:

- A) 135 MPH
- B) 135 kts
- C) 235 MPH
- D) 235 kts

48- Given:

P.A 40,000 ft.
Indicated Air Temperature -10°C

Calibrated Air Speed 350 kts

Find True Air Speed:

- A) 624
- B) 525
- C) 425
- D) 725

49- Given:

P.A 9,000 ft.
Indicated Air Temperature -20°C
True Air Speed 315 kts

Find Calibrated Air Speed:

- A) 196
- B) 296
- C) 396
- D) 496

50- Given:

P.A 0 ft.
Ram air Temperature 15°C

Find Density Altitude:

- A) 1000 ft.
- B) 0 ft.
- C) 2000 ft.
- D) 500 ft.

51- Given:

P.A 11,000 ft.
Ambient Air Temperature -10°C
Calibrated Altitude 12,500 ft.
Altitude of ground station 2,000 ft.

Find True Altitude:

- A) 11,390 ft.
- B) 13,500 ft.
- C) 12,390 ft.
- D) 14,390 ft.

52- Given:

P.A 35,000 ft.
Indicated Air Temperature -10°C
Calibrated Air Speed 300 kts

Find True Air Speed (Kts):

- A) 586
- B) 650
- C) 515
- D) 890

53- Given:

P.A 1,000 ft.
Indicated Air Temperature -25°C
True Air Speed 110 Kts

Find Calibrated Air Speed:

- A) 135Mph
- B) 136 kts
- C) 126 Mph
- D) None of above

54- 210 Knots equals to Mph.

- A) 218
- B) 418
- C) 242
- D) 442

55- Fuel used during flight is 85 US gallons in 2 hours and 08 minutes. Determine the fuel consumption?

- A) 40 GPH
- B) 52 GPH
- C) 40 PPH
- D) 52 GPH

56- If the maximum allowable Tailwind component for a given airplane is 9 knots, is it possible for taking off runway 30 at which surface wind is reported 050°/ 15 knots?

- A) Yes
- B) NO

57- 80 US gallons' equals to liters.

- A) 333
- B) 33.3
- C) 303
- D) 30.3

58- Given:

Pressure Altitude 10,000 ft.
Outside Air Temperature -20°C
Calibrated Airspeed 115 Kts

Find True Air Speed?

- A) 130 Kts
- B) 152 Kts
- C) 130 Mph
- D) 152 Mph

59- How long does it take to fly 720 NM at 120 knots ground speed?

- A) 700 Minutes
- B) 6 hours
- C) 600 Minutes
- D) 5.5 hours

60- Given:

First bearing 100° at 10:25 UTC

Second bearing 092° at 10:27 UTC

Ground Speed is 100 knots.

Find time & distance to Station?

- A) 15 min – 25 NM
- B) 10 min – 15 NM
- C) 20 min – 30 NM
- D) 5 min – 8 NM

61- Given:

Pressure Altitude 22,000 ft.

Outside Air Temperature -15°C

Calibrated Altitude 21,600 ft.

Find True Altitude?

- A) 21,800 ft.
- B) 20,800 ft.
- C) 20,200 ft.
- D) 22,800 ft.

62- Aircraft has flown 300 NM in 02 hours and 30 minutes, what is the ground speed?

- A) 120 Kts
- B) 105 Mph
- C) 120 Mph
- D) 105 Kts

63- The mass of 48 US gallons Fuel is: (S.G = 0.72)?

- A) 345 Kg.
- B) 288 lbs.
- C) 345 lbs.
- D) 288 Kg.

64- Given:

True course **040 °**
True air speed **120 kts**
Wind: **160° / 20 kts**

Find True Heading and Ground Speed?

- A) TH= 030° – G/S=100 Kts
- B) TH= 053° – G/S=110 Kts
- C) TH= 048° - G/S= 130 Kts
- D) TH= 034° - G/S= 105 Kts

65- If an aircraft is required to fly at 0.80 (Mach No.) and maintain FL290, what CAS should be kept?

- A) 280 Kts
- B) 290 Kts
- C) 295 Kts
- D) 310 Kts

66- Find the mass of 15 Imperial gallons Oil?

- A) 115 lbs.
- B) 135 lbs.
- C) 1150 lbs.
- D) 1350 lbs.

67- If True air speed is 135 knots and required wind correction angle is 17° to the right. What is the effective true air speed?

- A) 129 Kts
- B) 138 Kts
- C) 120 Kts
- D) 119 Kts

68- Given:

Pressure Altitude **30,000 ft.**
Outside Air Temperature **-35° C**

Find Density Altitude?

- B) 29,500 ft.
- C) 28,500 ft.
- D) 31,000 ft.

69- Given:

Climb/Mile= 350 (Ft./NM)

Ground Speed= 85 Knots

Find Climb/min?

- A) 495 Ft./min
- B) 465 Ft./min
- C) 450 Ft./min
- D) 515 Ft./min

70- Given:

Mach No.= 0.70

Indicated Air Temperature= -20°C

CT= 0.8

Find the Temperature Rise?

- A) -18.4 °C
- B) +30 °C
- C) +18.4 °C
- D) - 24 °C

71- Given:

Density Altitude 26,000 ft.

Outside air temperature -36°C

Find the Pressure altitude?

- A) 26,000 ft.
- B) 25,000 ft.
- C) 27,000 ft.
- D) 27,500 ft.

72- Surface wind is reported 310° at 25 knots and RUNWAY 27 is cleared to land. Find the Crosswind component?

- A) 9 Kts
- B) 11 Kts
- C) 21 Kts
- D) 16 Kts

73- If Outside Air Temperature is 10 °C. Find the Speed of Sound?

- A) 633 Mph
- B) 653 Kts
- C) 633 Kts
- D) 653 Mph

74- The mass of 25 Imperial gallons' fuel is (S. G=0.72):

- A) 18 lbs.
- B) 205 lbs.
- C) 180 lbs.
- D) 20.5 lbs.

75- Given:

Pressure Altitude 36,000 ft.

Outside Air Temperature - 40°C

Find the density altitude?

- A) 36,200 ft.
- B) 35,300 ft.
- C) 35,800 ft.
- D) 37,300 ft.

76- 36,000 ft. is approximately equal to Meter.

- A) 11,000
- B) 10,500
- C) 10,000
- D) 11,500

77- If an airplane flies at 154 knots and experiences 25° right wind correction angle. Find the Effective True Air Speed?

- A) 136 Kts
- B) 140 Kts
- C) 122 Kts
- D) 119 Kts

78- Given:

Pressure Altitude 39,000 ft.

Indicated Air Temperature -20 °C

Calibrated Air Speed 230 kts

CT = 1

Find True Air Speed?

- A) 423 Kts
- B) 431 Kts
- C) 454 Kts
- D) 442 Kts

79- How long does it take to fly 48 NM at 145 knots ground speed?

- A) 15 min
- B) 10 min
- C) 20 min
- D) 25 min

80- If the maximum allowable Crosswind component for a given aeroplane is 20 Kts and the reported surface wind is 210°/30 Kts. Is it possible to land on RUNWAY 16L?

- A) Yes
- B) No

81- Given:

Pressure Altitude **9,000 ft.**

Outside Air Temperature **-20 °C**

Calibrated Air Speed **135 Kts**

Find the True Air Speed?

- A) 140 Kts
- B) 150 Kts
- C) 160 Kts
- D) 130 Kts

82- If Outside Air Temperature is 0 ° C, calculate the Speed of Sound?

- A) 642 Mph
- B) 614 Kts
- C) 614 Mph
- D) 642 Kts

83- If fuel used during flight is 53 US gallons and elapsed flight time 03 hours and 20 minutes, calculate the fuel consumption.

- A) 90 PPH
- B) 17 GPH
- C) 96 PPH
- D) 15 GPH

84- First Bearing is **340° at time 16:25 UTC**

Second Bearing is **331° at time 16:28 UTC**

Ground Speed **75 Knots**

Find time and distance to station?

- A) 15 min – 20 NM
- B) 20 min – 25 NM
- C) 25 min – 30 NM
- D) 30 min – 35 NM

85- Given:

Pressure Altitude **34,000 ft.**

Calibrated Air Speed **300 Kts**

Find the Mach No.?

- A) 0.80
- B) 0.96
- C) 0.90
- D) 0.86

86- An aircraft flies 154 NM in 01 hour and 20 minutes. Calculate the Ground Speed?

- A) 105 Kts
- B) 115 Kts
- C) 120 Kts
- D) 125 Kts

87- Given:

Climb/mile **380 ft./NM**

Ground Speed **120 Kts**

Find the Climb/min?

- A) 730 ft./min
- B) 760 ft./min
- C) 780 ft./min
- D) 740 ft./min

88- Given:

Mach No. **0.85**

Indicated Air Temperature **+10 °C**

CT= 0.8

Find the True Air Temperature (OAT)?

- A) +27 °C
- B) -20 °C
- C) -37 °C
- D) +20 °C

89- If surface wind is reported: 290° / 20 knots and RUNWAY 18 is cleared to land.

Calculate the Head (or Tail) wind component?

- A) Tailwind 11 knots
- B) Headwind 7 knots
- C) Tailwind 7 knots
- D) Headwind 11 knots

90- Given:

Pressure Altitude **24,000 ft.**

Outside Air Temperature **-20 °C**

Calibrated Altitude **23,200 ft.**

Find True Altitude?

- A) 24,400 ft.
- B) 23,800 ft.
- C) 25,200 ft.
- D) 22,600 ft.

91-210 Km is equal to Statute miles.

- A) 145
- B) 125
- C) 130
- D) 140

92- If Density Altitude is 31,000 ft. and Outside Air Temperature is -46 °C, find the Pressure Altitude?

- A) 30,000 ft.
- B) 29,500 ft.
- C) 32,500 ft.
- D) 31,000 ft.

93- Given:

True Course	230°
True Air Speed	105 Kts
Wind:	260°/ 30 kts

Find the True Heading and Ground Speed?

- A) TH= 222° - G/S= 131 Kts
- B) TH= 238° - G/S= 79 Kts
- C) TH= 243° - G/S= 89 Kts
- D) TH=217° - G/S= 131 Kts

94- Given:

CAS:	230 kts
FL120	
OAT:	-10°C

What is the TAS?

- A) 266 kts
- B) 273 kts
- C) 280 kts
- D) 287 kts

95- You are flying at FL 80 and air temperature is ISA +15. What CAS is required to make TAS 240 kts?

- A) 208 kts
- B) 214 kts
- C) 220 kts
- D) 226 kts

96- Given:

Pressure altitude 9.000 ft.

OAT -32 °C

CAS 200 kts

What is the TAS?

- A) 215 kts
- B) 200 kts
- C) 205 kts
- D) 222 kts

97- Given

Magnetic track: 210°

Magnetic HDG: 215°

VAR: 15°E

TAS: 360 kts

Aircraft flies 64 NM in 12 min

Calculate the true W/V.

- A) 265°/50 kts
- B) 195°/50 kts
- C) 235°/50 kts
- D) 300°/30 kts

98- Given

True course: 092°

TAS: 250 kts

W/V: 204° (T)/38 kts

Calculate the true heading and ground speed

- A) 100°,262 kts
- B) 120°,236 kts
- C) 100°,236 kts
- D) 120°,264 kts

99- Given:

True HDG: 145°

TAS: 240 kts

Track (°T): 150°

G/S: 210 kts

Calculate the W/V

- A) 360/35kts
- B) 180/35kts
- C) 295/35kts
- D) 115/35kts

100- Given:

True HDG: 074°
TAS: 230 kts
Track: 066° (T)
GS: 242 kts

Calculate the W/V.

- A) 180/25 kts
- B) 180/35 kts
- C) 185/45 kts
- D) 185/40 kts

101- Given:

Fuel flow: 8,400 Kg/hr.
Specific Gravity: 0.80
Mach number: 0.76
OAT: -36°C

What is the specific fuel consumption?

- A) 14, 7 kg/NM air distance.
- B) 18, 4 kg/NM air distance.
- C) 19, 5 kg/NM air distance.
- D) 15, 6 kg/NM air distance.

102- Given:

CAS: 140kts
FL80
OAT: +20°C

What is the TAS?

- A) 156 kts
- B) 160 kts
- C) 164 kts
- D) 168 kts

103- Given

TAS: 188 kts
FL085
OAT: -10° C

What is the CAS?

- A) 145 kts
- B) 168 kts
- C) 195 kts
- D) 188 kts

104- The equivalent of 70 m/sec is approximately

- A) 145 kts
- B) 136 kts
- C) 210 kts
- D) 35 kts

105- Given:

Fuel flow: 6.5 t/hr.

Specific gravity: 0.80

Mach number: 0.68

OAT: -30°C

Headwind component: 25 kts

What is the specific fuel consumption?

- A) 16.7 kg/NM air distance.
- B) 13.4 kg/NM ground distance.
- C) 13.4 kg/NM air distance.
- D) 16.7 kg/NM ground distance.

106- Given:

TAS: 140 kts

P.A FL 80

OAT: 20 °C

What is the CAS?

- A) 120 kts
- B) 129 kts
- C) 151 kts
- D) 163 kts

107- Given:

CAS: 120 kts

P.A FL 80

OAT: +20°C

What is the TAS?

- A) 132 kts
- B) 102kts
- C) 120 kts
- D) 141 kts

108- Given:

True HDG 133°
TAS 225 kts
Track 144° (T)
GS 206 kts

Calculate the W/V.

- A) 060/40 kts
- B) 075/45 kts
- C) 060/45 kts
- D) 075/55 kts

109- Given:

True course: 046°
TAS: 295 kts
W/V: 247° (T)/15 kts

Calculate the true heading and ground speed

- A) 045°,309 kts
- B) 186°,355 kts
- C) 077°,420 kts
- D) 065°,370 kts

110- Given:

M: 0.80
OAT: -50°C
P.A FL 330
GS: 490 kts
VAR: 20°w
Magnetic heading: 140°
Drift: 11°R

Calculate the true W/V.

- A) 200° /95 kts.
- B) 025° /47 kts.
- C) 020°/95 kts.
- D) 025°/45 kts.

111- Given

True course: 125°
TAS: 420 kts
W/V: 240° (T)50 kts

Calculate the true heading and ground speed

- A) 045°,400 kts
- B) 131°,439 kts
- C) 100°,420 kts
- D) 065°,370 kts

112- Given:

TAS: 485 kts
OAT: ISA+10°C
P.A FL410

Calculate the Mach number.

- A) 0.85
- B) 0.90
- C) 0.825
- D) 0.87

113- Given:

TAS 487 kts
P.A FL330
Temperature: ISA + 15° C

Calculate the Mach number.

- A) 0.81
- B) 0.87
- C) 0.76
- D) 0.78

114- If the headwind component is 50 kts, The FL 330, temperature ISA -7 °C and the ground speed is 495 kts, what is the Mach number?

- A) 1.00
- B) 0.79
- C) 0.95
- D) 0.75

115- Given:

Fuel flow: 42 US Gal/hr.
Specific gravity: 0.72
TAS: 210 kts

What is the specific fuel consumption?

- A) 1,052 kg/NM air distance.
- B) 0,757 kg/NM air distance.
- C) 0,144kg/NM air distance.
- D) 0, 545 kg/NM air distance.

116- Given:

Fuel flow: 28 Imp Gal/hr.

Specific gravity: 0.72

TAS: 154 mph

What is the specific fuel consumption?

- A) 0, 60 kg/NM air distance.
- B) 0, 68 kg/NM air distance.
- C) 1, 46 kg/NM air distance.
- D) 0, 50 kg/NM air distance.

117- Given:

CAS: 140 kts

P.A FL 130

TAS: 174 kts

What is the OAT?

- A) -11°C
- B) +6 °C
- C) 0 °C
- D) -6°C

118- If the TAS exceeds the CAS by 20% at FL 100 the OAT should be:

- A) -5 °C.
- B) +5 °C.
- C) +15 °C.
- D) is not defined.

119- Given:

CAS: 130 kts

P.A : 1.000 ft.

TAS: 127 kts

What is the OAT?

- A) +20°C
- B) +10 °C
- C) 0°c
- D) -8 °C

120- Given:

TAS: 485 kts

True HDG: 226°

W/V: 110° (T) /95 kts

Calculate the drift. angle and GS.

- A) 12°L - 521 kts.
- B) 9°R - 533 kts.
- C) 9°L - 533 kts.
- D) 12°R - 521 kts.

121- Given:

TAS: 140 kts
HDG: 005 ° (T)
W/V: 265/25 kts

Calculate the drift. and GS.

- A) 11°R - 120 kts.
- B) 9°L - 140 kts.
- C) 11°L -142 kts.
- D) 10°R-146 kts.

122- Given:

TAS: 472 kts
True HDG: 005°
WN: 110° (T)/50 kts

Calculate the drift. angle and GS.

- A) 6°L - 487 kts.
- B) 7°R - 491 kts.
- C) 7°L - 497 kts.
- D) 7°R - 487 kts.

123- Given:

TAS: 235 kts
HDG: 076°(T)
W/V: 040/40 kts

Calculate the drift. angle and GS.

- A) 5°R-217 kts.
- B) 7°L-269 kts.
- C) 5°L-255 kts
- D) 6°R-204kts.

124- Given:

TAS: 190 kts
True HDG: 085°
W/V: 110° (T)/50 kts

Calculate the wind correction angle and the GS.

- A) 7°R- 146 kts.
- B) 7°L- 156 kts.
- C) 4°R- 168 kts.
- D) 4°L- 145 kts.

125- Given

True course: 327°
TAS: 520 kts
W/V: 250° (T)/90 kts

Calculate the true heading and ground speed.

- A) 317°,492 kts
- B) 186°,444 kts
- C) 123°,420 kts
- D) 325°,370 kts

126- Given:

TAS: 270 kts
True HDG: 145°
Actual wind: 205° (T)/30 kts

Calculate the drift. angle and GS.

- A) 8°L - 266 kts.
- B) 6°R - 251 kts.
- C) 6°L - 256 kts.
- D) 6°R - 259 kts.

127- . Given:

True course: 166°
TAS: 290 kts
W/V: 120° (T)/20 kts

Calculate the true heading and ground speed.

- A) 163°,276 kts
- B) 186°,320 kts
- C) 157°,300 kts
- D) 155°,276 kts

128- Given:

TAS: 205 kts
HDG: 180 °(T)
W/V: 240°/25 kts

Calculate the drift. and GS.

- A) 7°R - 192 kts.
- B) 6°L - 194 kts.
- C) 3°L - 184 kts.
- D) 4°R -195 kts.

129- Given:

TAS: 120 kts
Actual HDG: 150°
Wind: 245°/12 kts

What is the wind correction angle?

- A) 6° to the right.
- B) 6° to the left.
- C) 12° to the right.
- D) 12° to the left.

130- Given:

True Heading: 180°
TAS: 500 kts
W/V: 225°/100 kts

Calculate the GS.

- A) 455 kts
- B) 600 kts
- C) 535 kts
- D) 435 kts

131- Given:

TAS: 470 kts
True HDG: 317°
W/V: 045° (T)/45 kts

Calculate the drift. angle and GS.

- A) 3°R - 470 kts.
- B) 6°L - 470 kts.
- C) 6°L - 480 kts.
- D) 6°R - 480 kts.

132- Given:

TAS: 132 kts
True HDG: 257°
W/V: 095° (T)/35 kts

Calculate the drift. angle and GS.

- A) 7°R-176 kts.
- B) 4°R-166 kts.
- C) 4°L - 166 kts.
- D) 7°L -176 kts.

133- Given:

TAS: 150 kts
Actual HDG: 270°
Wind: 245°/12 kts

What is the wind correction angle?

- A) 6° to the right.
- B) 6° to the left.
- C) 2° to the right.
- D) 2° to the left.

134- Given:

TAS: 465 kts
HDG: 124° (T)
W/V: 170°/80 Kts

Calculate the drift. and GS.

- A) 8°L - 415 kts.
- B) 3°L - 415 kts.
- C) 3°R - 400 kts.
- D) 8°R - 400 kts.

135- Given:

Runway direction: 230° (T)
Surface WN: 280° (T)/40 kts

Calculate the effective cross-wind component.

- A) 21 kts
- B) 37 kts
- C) 31 kts
- D) 25 kts

136- Given:

TAS: 90 kts
HDG: 355° (T)
W/V: 120°/20 kts

Calculate the track and GS.

- A) 006° (T) - 95 kts.
- B) 346° (T) - 103 kts.
- C) 358° (T) - 101 kts.
- D) 359° (T) - 102 kts.

137- Given:

TAS: 125 kts
True HDG: 355°
W/V: 320° (T)/30 kts

Calculate the true track and GS.

- A) 005° (T) - 92 kts.
- B) 348° (T) - 92 kts.
- C) 348° (T) - 102 kts,
- D) 005° (T) - 102 kts.

138- An aircraft-is on final approach to Runway 32R (322°) The wind velocity reported by the tower is 350°/20 kts. TAS on approach is 95 kts. In order to maintain the centre line, the aircraft's heading should be:

- A) 322° (M)
- B) 328° (M)
- C) 316° (M)
- D) 326° (M)

139- Given

TAS: 227 kts
Track: 316° (T)
W/V: 205°/15 Kts

Calculate the HDG and GS.

- A) 313° (T) - 222 kts.
- B) 311° (T) - 221 kts.
- C) 312° (T) - 232 kts.
- D) 310° (T) - 239 kts.

140- Given:

Maximum allowable crosswind component: 20 kts

Runway: 06

RUNWAY QDM: 063° (M)

Wind direction: 100° (M)

Calculate the maximum allowable wind speed?

- A) 26 kts
- B) 38 kts
- C) 33 kts
- D) 23 kts

141- TAS: 155 kts
Track: 305° (T)
W/V: 160°/18 kts

Calculate the HDG and GS.

- A) 301° (T) - 169 kts.
- B) 309° (T) - 169 kts.
- C) 309° (T) - 141 kts.
- D) 311° (T) - 141 kts.

142- Given:
Actual HDG: 290°
TAS: 250 kts
Wind: 135°/75kts

What is the ground speed?

- A) 320 kts
- B) 300 kts
- C) 175 kts
- D) 200 kts

143- Given:
TAS: 440 Kts
HDG: 349° (T)
W/V: 040°/40 Kts

Calculate the drift. and GS.

- A) 4°L - 416 kts.
- B) 2°L - 426 kts.
- C) 6°R - 395 kts.
- D) 5°R - 385 kts.

144- Given:
TAS: 220 kts
True course: 212°
W/V: 160°/50

Calculate the GS.

- A) 186 kts
- B) 290 kts
- C) 246 kts
- D) 250 kts

145- Given:

Runway direction: 083° (M)

Surface W/V: 035°/35kts

Calculate the effective headwind component.

- A) 24 kts
- B) 18 kts
- C) 31 kts
- D) 34 kts

146- Given:

TAS: 270 kts

Track: 260° (T)

W/V: 275°/30 kts

Calculate the HDG and GS.

- A) 269° (T)- 231 kts.
- B) 262° (T)- 231 kts.
- C) 269° (T)- 241 kts.
- D) 262° (T)- 241 kts.

147- Given:

True heading: 265°

TAS: 290 kts

W/V: 210°/35 kts

What is the true track and GS?

- A) 261° and 305 kts
- B) 259° and 272 kts
- C) 260° and 315 kts
- D) 271° and 272 kts

148- Given:

Runway direction: 305° (M)

Surface W/V: 260°(M)/30 kts

Calculate the cross-wind component.

- A) 18 kts
- B) 29 kts
- C) 27 kts
- D) 21 kts

149- The reported surface wind from the tower is 240°/35 kts. Runway 30(300°). What is cross wind component?

- A) 30 kts
- B) 24 kts
- C) 35 kts
- D) 21 kts

150- Given:

TAS:	155 kts
HDG:	216° (T)
W/V:	090°/60kts

Calculate the track and GS.

- A) 236° (T) - 175 kts.
- B) 230° (T) - 196 kts.
- C) 222° (T) - 181 kts.
- D) 220° (T) - 186 kts.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	A	39	A	77	B	115	D
2	B	40	B	78	D	116	B
3	A	41	C	79	C	117	C
4	A	42	D	80	B	118	C
5	A	43	D	81	B	119	D
6	C	44	C	82	D	120	B
7	A	45	B	83	C	121	D
8	A	46	A	84	B	122	A
9	B	47	A	85	D	123	D
10	C	48	A	86	B	124	A
11	D	49	B	87	B	125	A
12	C	50	B	88	B	126	C
13	D	51	C	89	C	127	A
14	A	52	C	90	A	128	B
15	D	53	A	91	C	129	A
16	A	54	C	92	D	130	D
17	B	55	A	93	B	131	B
18	C	56	A	94	B	132	B
19	D	57	C	95	A	133	D
20	D	58	A	96	A	134	A
21	C	59	B	97	A	135	C
22	B	60	A	98	A	136	B
23	A	61	D	99	D	137	D
24	A	62	A	100	B	138	B
25	B	63	B	101	B	139	C
26	B	64	C	102	C	140	C
27	B	65	D	103	B	141	A
28	C	66	B	104	B	142	A
29	A	67	A	105	D	143	A
30	D	68	D	106	A	144	A
31	D	69	A	107	D	145	A
32	C	70	C	108	B	146	D
33	B	71	A	109	A	147	D
34	A	72	D	110	C	148	D
35	B	73	B	111	B	149	A
36	C	74	C	112	A	150	B
37	C	75	D	113	A		
38	C	76	A	114	C		

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

HUMAN PERFORMANCE



1- What is hypoxia?

- A) A total absence of oxygen in the body's tissue
- B) A more than normal amount of oxygen in the body's tissue
- C) A less than normal amount of oxygen in the lungs
- D) A total absence of nitrogen in the body's tissue

2- What does the central nervous system consist of?

- A) The brain
- B) The brain and spinal cord
- C) The brain, spinal cord and reflex systems
- D) The brain, spinal cord, reflex systems and proprioceptive system

3- The chemical composition of the Earth's atmosphere (ICAO standard atmosphere) is:

- A) 71% nitrogen, 28% oxygen, 0,9% argon, 0,03% carbon dioxide.
- B) 71% nitrogen, 28% oxygen, 0,9% carbon dioxide, 0,03% argon.
- C) 78% nitrogen, 21% oxygen, 0,9% carbon dioxide, 0,03% argon.
- D) 78% nitrogen, 21% oxygen, 0,9% argon, 0,03% carbon dioxide.

4- Hypoxia can be prevented when the pilot:

- A) is using additional oxygen when flying above 10.000 ft..
- B) is relying on the body's built-in warning system recognizing any stage of hypoxia.
- C) is swallowing, yawing and applying the Valsalva method.
- D) will not exceed 20.000 ft. cabin pressure altitude.

5- Healthy people are usually capable to compensate for a lack of oxygen up to:

- A) 15.000 feet.
- B) 10.000 - 12.000 feet.
- C) 20.000 feet.
- D) 25.000 feet.

6- Physiological problems due to increasing altitude are caused by:

- A) Accelerations.
- B) Disorientation
- C) Decreased atmospheric pressure.
- D) Increased atmospheric pressure.

7- What is the Time of Useful Consciousness?

- A) The pilot's reaction time when faced with hypoxia.
- B) The time taken to become aware of hypoxia due gradual decompression.
- C) The length of time during which an individual can act with both mental and physical efficiency and alertness, measured from the moment at which he loses his available oxygen supply.
- D) The period of time between the start of hypoxia and the moment that the pilot becomes aware of it.

8- What could cause hyperventilation?

- A) Extreme low rate of breathing.
- B) Abuse of alcohol.
- C) Fear, anxiety and distress.
- D) Fatigue

9- What is hypoxia?

- A) A state characterized by an excessive supply of oxygen which may be due to maladjustment of the mask.
- B) The total absence of oxygen in the air.
- C) The respiratory symptom associated with altitude decompression sickness.
- D) Any condition where the oxygen concentration of the body is below normal limits or where the oxygen available to the body cannot be used due to some pathological condition.

10- After a rapid decompression at an altitude of 30.000 ft. the first action of the pilot shall be:

- A) Maintaining aircraft control and preventing hypoxia (use of oxygen mask).
- B) Informing ATC
- C) Informing the cabin crew.
- D) Preventing panic of the passengers.

11- When exhaling, the expired air contains:

- A) More oxygen than the inhaled air.
- B) More carbon dioxide than the inspired air.
- C) Less water vapor than the inhaled air.
- D) More nitrogen than the inhaled air.

12- Anxiety and fear can cause:

- A) Spatial disorientation.
- B) Hyperventilation.
- C) Hypoxia.
- D) Hypoglycemia.

13- A good method to treat hyperventilation is to:

- A) Don an oxygen mask.
- B) Execute the Valsalva maneuver.
- C) Talk oneself through the relevant procedure aloud to emotionally calm down and reduce the rate of breathing simultaneously.
- D) Close the eyes and relax.

14- Oxygen, combined with hemoglobin in blood is transported by:

- A) White blood cells.
- B) Platelets.
- C) Red blood cells
- D) Blood plasma.

15- Hyperventilation is:

- A) A decreased lung ventilation.
- B) A too high percentage of nitrogen in the blood.
- C) An increased lung ventilation.
- D) A too high percentage of oxygen in the blood.

16- Exchange of gasses between the body and the environment takes place at the:

- A) Central nervous system.
- B) Heart.
- C) Muscles.
- D) Lungs.

17- Hypoxia is caused by:

- A) A higher affinity of the red blood cells (hemoglobin) to oxygen.
- B) Reduced partial pressure of nitrogen in the lung.
- C) An increased number of red blood cells.
- D) Reduced partial oxygen pressure in the lung.

18- According to the ICAO standard atmosphere, the temperature lapse rate of the troposphere is approximately:

- A) -2°C every 1.000 feet.
- B) 10 °C every 100 feet.
- C) 2 °C every 1.000 meters.
- D) Constant in the troposphere.

19- Early symptoms of hypoxia could be:

- 1) Euphoria**
- 2) Decreased rate and depth of breathing**
- 3) Lack of concentration**
- 4) Visual disturbances**

- A) 1,2,4
- B) 1,2,3,4
- C) 1,2,3.
- D) 1,3,4

20- The percentage of oxygen in the air at an altitude of approximately 34.000 ft. is:

- A) 21%
- B) 5%
- C) 10,5%
- D) 42%

21- Hypoxia can also be caused by:

- A) A lack of nitrogen in ambient air.
- B) Too much carbon dioxide in the blood.
- C) Increasing oxygen partial pressure used for the exchange of gases.
- D) A lack of red blood cells in the blood or decreased ability of the hemoglobin to transport oxygen.

22- The barometric pressure has dropped to 1/2 of the pressure at sea level at:

- A) 18.000 feet.
- B) 10.000 feet.
- C) 25.000 feet.
- D) 30.000 feet.

23- A pilot can overcome hyperventilation by:

- A) The use of drugs stabilizing blood pressure
- B) Depending on instruments.
- C) Increasing the rate and depth of breathing to eliminate harmful carbon dioxide.
- D) Controlling the rate and depth of breathing, breathing into a bag or speaking with a loud voice.

24- Adverse effects of carbon monoxide increase as:

- A) Air pressure increases.
- B) Altitude decreases.
- C) Altitude increases.
- D) Relative humidity decreases.

25- Hyperventilation is due to an excessive rate of breathing and can produce the following symptoms:

- A) Blue finger-nails and lips.
- B) Dizziness, tingling sensation in the fingers and toes, nausea and blurred vision.
- C) Reduced heart rate and increase in visual acuity.
- D) A state of overconfidence and reduced heart rate.

26- The volume percentage of oxygen in the atmosphere at 30.000 feet remains at 21%, but the partial pressure of oxygen:

- A) Decreases with decreasing barometric pressure.
- B) Remains constant, independent from altitude.
- C) Increases by expansion.
- D) Decreases significantly with lower temperatures.

27- The main function of the red blood cells is:

- A) The cellular defense of the organism.
- B) To participate in the process of coagulation of the blood.
- C) To transport oxygen.
- D) To contribute to the immune response of the organism.

28- Which of the following statements concerning hypoxia is correct?

- A) It has little effect on the body, because the body can always compensate for it.
- B) It is never a problem at altitudes below 25.000 ft.
- C) It activates the senses and makes them function better.
- D) It is a potential threat to safety

29- Which statement are correct?

- 1) Euphoria can be a symptom of hypoxia.**
- 2) Someone in an euphoric condition is more prone to error.**
- A) 1 is correct, 2 is not correct.
- B) 1 is not correct, 2 is correct.
- C) 1 and 2 are both not correct.
- D) 1 and 2 are both correct.

30- Which measurer(s) will help to compensate hypoxia?

- 1) Descend below 10.000 ft..**
- 2) Breathe 100% oxygen.**
- 3) Climb to or above 10.000 ft..**
- 4) Reduce physical activities.**
- A) 1, 2 and 3 are correct.
- B) Only 1 is correct.
- C) 1 and 2 are correct, 3 and 4 are false.
- D) 1, 2 and 4 are correct.

31- The atmosphere is a mixture of gases and the largest part is:

- A) Oxygen
- B) Nitrogen
- C) Helium
- D) Hydrogen

32- The total air pressure at 33.700 ft. is 190 mmHg. What is the partial pressure of oxygen?

- A) 148 mmHg.
- B) 380 mmHg.
- C) 3,8 mmHg.
- D) Approximately 39 mmHg.

33- What is most correct regarding hypoxia?

- A) It is an abnormal reduction of the hemoglobin content of the red blood cells.
- B) It is the result of insufficient oxygen in the blood stream.
- C) It causes chest pain.
- D) It is caused by too much CO₂ in the air.

34- Hypoxia is the result of:

- A) High barometric pressure at higher altitudes.
- B) Excessive nitrogen in the bloodstream.
- C) Decreasing amount of oxygen as your altitude increases.
- D) Both A and B are correct.

35- List the four major types of hypoxia, which are classified according to the cause of the hypoxia.

- A) Hypoxic, hypanemic, stagnant and histotoxic.
- B) Hypoxic, hypanemic, hyperventic and histotoxic.
- C) Anaemic, angina, stroke and seizure.
- D) Altitude, CO, hyperventilation and self-induced.

36-To overcome the symptoms of hyperventilation, a pilot should:

- A) Swallow or yawn.
- B) Increase the breathing rate.
- C) Slow the breathing rate.
- D) Use 100% oxygen.

37- Carbon monoxide (CO) poisoning in flight:

- A) Presents an extremely dangerous situation as the blood may not be able carry sufficient amounts of oxygen to vital cells and tissues of the body.
- B) Can be cured by breathing into a plastic bag to retain the carbon monoxide.
- C) Is usually harmless because oxygen is more easily attached to hemoglobin than carbon monoxide to a magnitude of 200 times.
- D) Is a complication when hyperventilating and requires its own special and individual treatment.

38- Carbon monoxide poisoning can be treated by:

- A) Increasing the amount of oxygen being physically dissolved in the blood.
- B) Decreasing the amount of oxygen being combined with the hemoglobin in the blood.
- C) Increasing the amount of nitrogen being physically dissolved in the blood.
- D) Breathing into a paper bag.

39- Hemoglobin has an affinity for carbon monoxide of __ times over oxygen,

- A) 50 - 75
- B) 210 -250
- C) 5 - 10
- D) 500 -1.000

40- The percentage of oxygen in the troposphere in dry air:

- A) is dependent of the partial pressure which is constant above sea level.
- B) Increases with longitude.
- C) is independent of altitude.
- D) is variable because oxygen replaces water vapor.

41- The most dangerous sign of hypoxic hypoxia is:

- A) Impaired judgment.
- B) Decreased heart rate.
- C) Increased respiration rate.
- D) Bluish skin.

42- The symptoms of hyperventilation are easily confused with those of:

- A) Hypoxia
- B) Hypertension
- C) Hypotension
- D) Hyperopic

43- What is the approximate percentage of nitrogen in the atmosphere at 25.000 ft.?

- A) 1%
- B) 78%
- C) 43%
- D) 21%

44- The effect of hypoxia to vision:

- A) Can only be detected when smoking tobacco.
- B) Is usual stronger with the cones
- C) Is stronger with the rods.
- D) Does not depend on the level of illumination.

45- The part(s) of the eye responsible for night vision:

- A) Are rods and cones.
- B) Are the cones.
- C) Are the rods.
- D) Is the cornea.

46- The time required for complete adaptation is:

- A) For day and night: 30 min.
- B) For high levels of illumination 10 minutes and for low levels of illumination 30 minutes.
- C) For high levels of illumination 10 sec and for full dark adaptation 30 min.
- D) For night 10 sec and for day 30 min.

47-Rods (visual cells) allow for:

- A) Precise vision of contours and colors.
- B) Good, virtually instantaneous night vision.
- C) Good night vision after adaptation to darkness (30 min).
- D) Red vision, both during the day and at night.

48- When flying at night the first sense to be affected by a slight degree of hypoxia is the:

- A) Proprioceptive sensitivity.
- B) Cochlea.
- C) Sense of balance
- D) Vision.

49- The retina of the eye:

- A) Only regulates the light that falls into the eye.
- B) Filters the UV-light.
- C) Is the muscle changing the size of the crystalline lens.
- D) Is the light-sensitive inner lining of the eye containing the photoreceptors essential for vision.

50- The fovea centralis is:

- A) Where the optic nerves come together with the pupil.
- B) The area of best day vision and best night vision
- C) The area of best day vision and no night vision at all.
- D) The area of the blind spot (optic disc).

51- When you stare at a single light against the dark (e.g. an isolated star) you will find the light appears to move after some time. This phenomenon is called:

- A) Black hole illusion.
- B) Auto kinesis illusion.
- C) Coriolis illusion.
- D) Leans.

52- Auto kinesis can give the pilot the impression that:

- A) Lights are further away than in fact they are.
- B) The aircraft is climbing.
- C) Lights from ships are stars
- D) A star is another aircraft.

53- Hypoxia can affect night vision:

- A) Less than day vision.
- B) At approximately 5.000 ft.
- C) And causes the auto kinesis phenomena.
- D) And causes the Coriolis effect.

54- Color vision is performed by three different classes of cones:

- A) Yellow, blue, red.
- B) Green, blue, yellow.
- C) Red, yellow, blue
- D) Red, green, blue.

55- How should you scan for other traffic at night?

- A) Scan the visual field very rapidly.
- B) Look to the side of the object and scan rapidly
- C) Look to the side of the object and scan slowly.
- D) Look above or below the object and scan rapidly.

56- Cigarette smoking has particular significance to the flyer, because there are long-term and short-term harmful effects. From cigarette smoking the pilot can get:

- A) A mild carbon monoxide poisoning increasing the pilot's tolerance to hypoxia.
- B) A suppressed desire to eat and drink.
- C) A mild carbon monoxide poisoning decreasing the pilot's tolerance to hypoxia.
- D) A mild carbon dioxide poisoning increasing the pilot's tolerance to hypoxia.

57- The chemical substance responsible for addiction to tobacco is:

- A) Carbon monoxide.
- B) Tar.
- C) The combination of nicotine, tar and carbon monoxide.
- D) Nicotine.

58- Susceptibility to carbon monoxide poisoning, as from smoking tobacco, increases as:

- A) Air pressure increases.
- B) Altitude decreases.
- C) Air temperature increases
- D) Altitude increases.

59- The person with overall responsibility for the flight is the:

- A) Co-pilot.
- B) Pilot-in-command.
- C) Flight operation officer
- D) Air traffic controller.

60- In Bright light, the best vision is obtained by looking

- A) Directly at the object.
- B) Off center of the object.
- C) With quick scanning motions.
- D) With your peripheral vision.

61- To see an object most clearly at night, you should look:

- A) directly at the object.
- B) 5° to 10 ° away from the object.
- C) 45° away from the object.
- D) In quick scanning movements.

62- What part of the retina is most active during periods of darkness?

- A) The entire retina.
- B) Fovea.
- C) Rods.
- D) Cones.

63- Before a night flight, you should avoid bright lights for at least ----- minutes.

- A) 15
- B) 30
- C) 45
- D) 60

64- Inhaled oxygen is carried to the cells of your body by attaching to-----in your bloodstream.

- A) Hemoglobin
- B) Lungs
- C) Vessels
- D) Veins

65- A condition where there is insufficient of oxygen in your body because there is not enough oxygen in the air is referred to as:

- A) Anemic hypoxia.
- B) Hypoxic hypoxia.
- C) Hyperventilation.
- D) Carbon monoxide poisoning.

66- The time you have to make a rational and lifesaving decision following a lack of oxygen at a given altitude is known as the time of:

- A. Useful consciousness.
- B. Useful unconsciousness.
- C. Euphoria.
- D. Impaired judgment.

67- Carbon monoxide poisoning produces a state of anemic hypoxia in the body.

- A) True
- B) False

68- Breathing large amounts of carbon monoxide can result in:

- A) A warm sensation.
- B) Loss of muscle power.
- C) An increased sense of well-being.
- D) Tightness across the forehead and neck.

69- Rapid and deep breathing, even when you are using supplemental oxygen, can cause a condition known as:

- A) The bends.
- B) Anemic hypoxia.
- C) Hypoxic hypoxia.
- D) Hyperventilation.

70- When you consume alcohol, your physiological altitude:

- A) Increases.
- B) Decreases.
- C) Does not affect.
- D) It depends of individual metabolism

71- The physiological altitude of a smoker is raised from sea level to about:

- A) 5,000 feet.
- B) 7,000 feet.
- C) 11,000 feet.
- D) 12,000 feet.

72- What is the most effective way to use the eyes during night flight

- A) Look only at far away, dim lights.
- B) Scan slowly to permit off center viewing.
- C) Concentrate directly on each object for a few second.
- D) Use cone sensors to improve night vision.

73- What is the symptom of carbon monoxide poisoning?

- A) Rapid, shallow breathing.
- B) Pain and cramping of the hands and feet.
- C) Dizziness.
- D) Bubbles in blood and bending.

74- Which would most likely result in hyperventilation?

- A) A stressful situation causing anxiety.
- B) The excessive consumption of alcohol.
- C) An extremely slow rate of breathing and insufficient oxygen.
- D) Large amount of nitrogen and rapid breathing

75- Which is a common symptom of hyperventilation?

- A) Tingling of the hands, leg and feet.
- B) Increased vision keenness.
- C) Decreased breathing rate.
- D) Blue finger nails and lips.

76- A fatigued pilot:

- A) Considerably increases the ability to concentrate.
- B) Will show signs of increased irritability.
- C) Is acting similar as when encountering a state of depression.
- D) Will get precordial pain.

77- The organ which metabolism alcohol from the body is the:

- A) Liver
- B) Spleen
- C) Pancreas
- D) Kidneys

78- Concerning flying and blood alcohol content the following statement is correct:

- A) No flying under the influence of alcohol.
- B) Flying with up to 0,05% blood alcohol.
- C) Flying with up to 0,15% blood alcohol.
- D) Flying with up to 0,08% blood alcohol is safe, since

79- the following statements about alcohol is true?

- A) A blood alcohol content of 0,05% leads to unconsciousness.
- B) A unit of alcohol is equal to 50 ml of pure alcohol.
- C) A few drinks can make a person sleep better.
- D) Alcohol will lower the tolerance for hypoxia.

80- The decision making in emergency situations requires firstly:

- A) The whole crew to focus on the problem.
- B) Speed of reaction.
- C) Informing ATC thoroughly about the situation.
- D) Distribution of tasks and crew coordination.

81- Define situational awareness:

- A) The ability to rank tasks according to importance and to solve problems.
- B) The right to have and express your own feelings and ideas.
- C) The perception of the elements in the environment within a volume of space and time, the comprehension of their meaning and the projection of their status in the near future.
- D) The perception of the elements in the environment within a volume of space.

82- DRM (Dispatch Resource Management) training is:

- A) Intended to develop effectiveness of dispatcher performance by improving attitudes towards flight safety and human relationship management.
- B) Not intended to change the individual's attitude at all.
- C) Intended solely to alter an individual's personality.
- D) Is mainly of relevance to pilots with personality disorders or inappropriate attitudes.

83- Define effective communication:

- A) Effective communication is a transmission of a message from one brain to another.
- B) Effective communication is a transmission of a message from one brain to another with a minimum of change.
- C) Effective communication occurs when one person talks to another person.
- D) Effective communication occurs when one person.

84- Which factors can influence effective communications?

- A) Noise and voice.
- B) Workload, noise and voice.
- C) Voice.
- D) Workload and voice.

85- What is meant by the term CRM today?

- A) Cockpit resource management.
- B) Crew resource management.
- C) Company resource management.
- D) Crew reliability measurement.

86- 'It will not happen to me', can be used as an example to illustrate which attitude?

- A) Resignation
- B) Anti-authority
- C) Macho
- D) Invulnerability

87- Which of the following is not a hazardous attitude?

- A) Domination
- B) Macho
- C) Anti-authority
- D) Impulsivity

88- A stress reactions:

- A) The specific response of the body to every demand placed on a person.
- B) The non-specific response of the body to every demand placed on a person.
- C) The non-specific stimuli causing a human body to respond.
- D) The specific stimuli causing a human body to respond.

89- Stress may be defined as:

- A) A normal phenomenon which enables an individual to adapt to encountered situations.
- B) A poorly controlled emotion which leads to a reduction in capabilities.
- C) A psychological phenomenon which only affects fragile personalities.
- D) A human reaction which one must manage to eliminate.

90- What is a stressor?

- A) A psychological problem developed in a situation of danger.
- B) The adaptation response of the individual to his environment.
- C) An external or internal stimulus which is interpreted by an individual as being stressful.
- D) All external stimulations are stressors since they modify

91- Fatigue and stress:

- A) Lower the tolerance to hypoxia.
- B) Increase the tolerance to hypoxia.
- C) Do not affect hypoxia at all.
- D) Will increase the tolerance to hypoxia when flying below 15.000 feet.

92- In order to limit stress when flying, a pilot should:

- A) Drop activities outside work so as to focus on his work better.
- B) Forget about bad past experiences.
- C) Avoid anticipating events during a flight to manage his workload.
- D) Maintain his competence by practicing his professional skills and learning from past experiences.

93- Signs of stress include:

- A) Perspiration, dry mouth, dilated pupils, fast breathing.
- B) Lowering of the blood pressure.
- C) Faster, deep inhalation, stabbing pain around the heart.
- D) Rising of the blood pressure, pupils narrowing, stabbing pain around the heart.

94- The two types of fatigue are:

- A) Chronic and acute.
- B) Short-term and oppressive.
- C) Oppressive and negative.
- D) Heavy and light.

95- What does stress management involve?

- A) A constant stress prevention.
- B) A complete rejection of stress.
- C) The recognition and removal of stress.
- D) Recognizing stress, accepting it and developing a coping strategy.

96- Anxiety can affect:

- 1) Judgment**
- 2) Attention**
- 3) Memory**
- 4) Concentration**

- A) 1
- B) 1, 2, 3, 4
- C) 1, 2, 4
- D) 1, 2

97- Of the following statements regarding stress, which is correct?

- A) Stress and anxiety are the same in every sense.
- B) Stress and fatigue are synonymous.
- C) Stress may be positive; fatigue is always negative.
- D) Stress always has a negative effect on performance.

98- The most dangerous symptoms of hypoxia at altitude are:

- A) Breathlessness and reduced night vision.
- B) Euphoria and impairment of judgment.
- C) Hyperventilation.
- D) Sensation of heat and blurred vision.

99- What triggers stress in humans?

- A) Always the awareness of an emotion and a physiological activation (e.g. rapid heart rate).
- B) The subjective interpretation an individual gives to a situation experienced.
- C) Objective stimulation from the environment regards of subjective perceptions.
- D) Only strong excitations of the sensory organs: a flash of light, noise, the smell of smoke.

100- Stress is a reaction in order to adapt to a specific situation. This reaction:

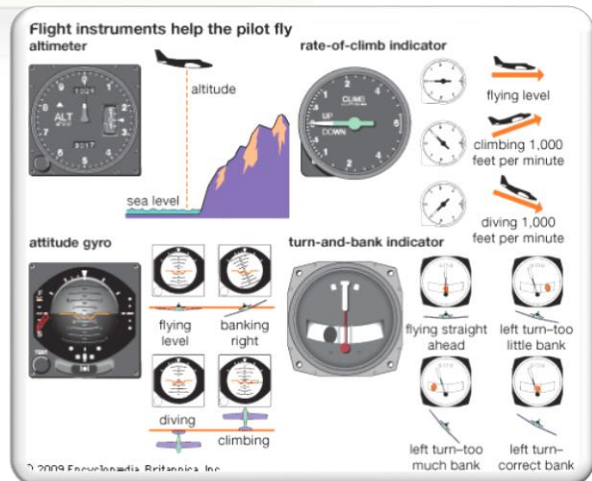
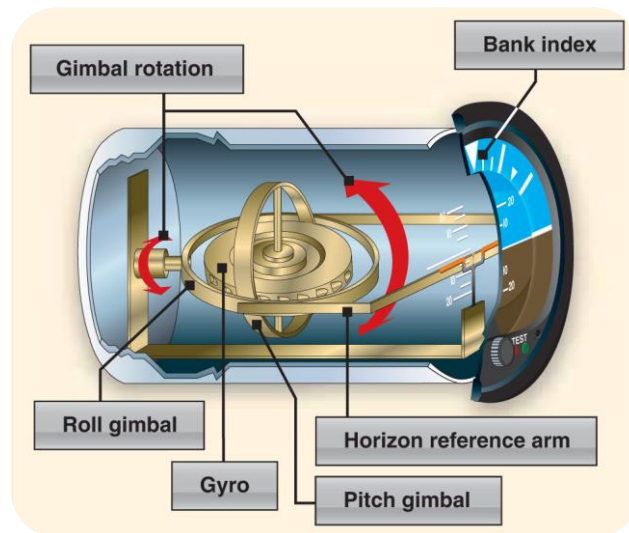
- A) Can only be controlled by medical treatment.
- B) Is purely physiological and automatic.
- C) May include various psychological and physiological elements which one can learn to manage.
- D) Is always linked to excessive fear.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	C	26	A	51	B	76	B
2	B	27	C	52	D	77	A
3	D	28	D	53	B	78	A
4	A	29	D	54	D	79	D
5	B	30	D	55	C	80	D
6	C	31	B	56	C	81	C
7	C	32	D	57	D	82	A
8	C	33	B	58	D	83	B
9	D	34	C	59	B	84	B
10	A	35	A	60	A	85	B
11	B	36	C	61	B	86	D
12	B	37	A	62	C	87	A
13	C	38	A	63	B	88	B
14	C	39	B	64	A	89	A
15	C	40	C	65	B	90	C
16	D	41	A	66	A	91	A
17	D	42	A	67	A	92	D
18	A	43	B	68	B	93	A
19	D	44	C	69	D	94	A
20	A	45	C	70	A	95	D
21	D	46	C	71	B	96	B
22	A	47	C	72	B	97	C
23	D	48	D	73	C	98	B
24	C	49	D	74	A	99	B
25	B	50	C	75	A	100	C

Flight Operation Officer Note

Flight Operation Officer Note

INSTRUMENTATION



1- Which one is of the following instrument operate based on differential pressure?

- A) Attitude indicator
- B) airspeed indicator
- C) Mach indicator
- D) B & C are correct

2- At which altitude the pressure decrease approximately half than much?

- A) 16,000`
- B) 20,000`
- C) 18,000`
- D) 22,000`

3- What is the value of standard pressure based on pound square inch at sea level?

- A) 14.7
- B) 2116
- C) 1013.2
- D) A & B are correct

4- Which one of following statement is not correct?

- A) Warm air has less dense than cold air
- B) density varies with both temp & pressure
- C) humidity affects the density of the air in higher degree
- D) humid air has less dense than dry air

5- ISA condition is:

- A) 15° c - 29.92 Hap
- B) 59 ° f - 29.92 INCH.HG
- C) 59 ° f - 2116 MB
- D) 15 ° c 1013.2 PSI

6- What is the standard temperature laps rate?

- A) 1 ° c per 1000`
- B) 1.1 ° c - 2.8 ° c per 1000`
- C) 4.5 ° f per 1000`
- D) 3.5 ° f per 1000`

7- Which instrument is based on pilot-static system?

- A) Altimeter
- B) VVI
- C) Mach indicator
- D) All answers are correct

8- Which one is of following instrument is use ambient (static) pressure?

- A) Air speed indicator
- B) V V I
- C) Altimeter
- D) All answers are correct

9- Which one is following instrument is use pitot (dynamic) air pressure?

- A) air speed
- B) altimeter
- C) VVI
- D) B & C are correct

10- What is the time for heading indicator reset against compass during unaccelerated straight and level flight?

- A) Every 20 minutes.
- B) Every 15 minutes.
- C) Every 10 minutes.
- D) No reset is required in this case.

11- What is the correct indication of a turn coordinator when aircraft is parked?

- A) Ball centered, miniature aircraft center.
- B) Ball centered, miniature aircraft same direction of last turn.
- C) Ball opposite direction of the last turn, miniature aircraft the same.
- D) Ball same direction of the last turn, miniature aircraft opposite direction of last turn.

12- The airspeed indicator measures the difference between....

- A) Impact and ram air pressure
- B) static and ambient air pressure
- C) total and ambient air pressure
- D) pitot and ram air pressure

13- What is the white color in airspeed indicator gage?

- A) Flap operating range
- B) normal operating range
- C) caution range speed
- D) A & C are correct

14- What is the stalling speed in specific configuration?

- A) VFE
- B) VS1
- C) VSO
- D) VNO

15- What is the color of normal operating range?

- A) White
- B) red
- C) yellow
- D) green

16- Which of the following speed marks by specific color in airspeed indicator gauge?

- A) VS1
- B) VLE
- C) VLO
- D) VA

17- What is the maximum structure cursing speed?

- A) VFE
- B) VNO
- C) VLE
- D) VNE

18- What is the color and speed range of caution operation?

- A) VNO-VNE-green
- B) VNO-VNE-yellow
- C) VS1-VNO-yellow
- D) VS1-VNO-green

19- What is the maneuvering speed?

- A) VLE
- B) VLO
- C) VNO
- D) VA

20- In turbulence or gust the pilot shall use airspeed....

- A) VA or below
- B) above VA
- C) L/D max speed
- D) VNE

21- What is the maximum speed for full and abrupt use of the control without risk of structural damage?

- A) VNO
- B) VNE
- C) VA
- D) VFE

22- What is max landing gear operating airspeed?

- A) VLO
- B) VLE
- C) VLC
- D) VA

23- What is the maximum landing gear down airspeed?

- A) VA
- B) VLE
- C) VLO
- D) VLC

24- The pilot shall adjust.... When want to retract the landing gear?

- A) VA
- B) VLC
- C) VLE
- D) VLO

25- When operating in A/D at sea level you maintain 70 kts in indicated airspeed for approaching to land, how would you adjust your indicated airspeed when operate at A/D with 8000` field elevation ISA condition?

- A) Increase airspeed
- B) remain constant
- C) Decrease airspeed
- D) none

26- What is your indicated and ground speed in high elevation airport than sea level?

- A) increase-increase
- B) decrease-decrease
- C) Remain constant-increase
- D) remain constant-decrease

27- The pilot can provide calibrated airspeed by correct indicated airspeed with....

- A) Installation error
- B) compressibility
- C) Pressure & temp
- D) friction

28- The pilot can provide the actual speed of airplane by

- A) CAS corrected with installation & position error
- B) IAS corrected with installation & position error
- C) CAS corrected by altitude & non-standard temperature
- D) IAS corrected by standard atmospheric condition & position error

29- What is the actual speed over ground?

- A) TAS
- B) EAS
- C) CAS
- D) GS

30- What would be the TAS when altitude increase or temp increase?

- A) Decrease
- B) increase
- C) Decrease first then increase
- D) remain constant

31- Air compressibility error determine for equivalent air speed operate:

- A) Above 200 kts
- B) below 100 kts
- C) Training airplane
- D) below 20,000`

32- Which airspeed read directly from the airspeed indicator?

- A) TAS
- B) CAS
- C) GS
- D) IAS

33- The altimeter indicates flight altitude by measuring

- A) Pitot pressure
- B) ambient air pressure
- C) Ram air pressure
- D) impact air pressure

34- In altimeter the longest and mid-size hand shows....

- A) 1000`-100`
- B) 100`-10,000`
- C) 100`-1000`
- D) 1000`-10,000`

35- Shortest point of altimeter shows....

- A) Ten-thousands of feet
- B) thousands of feet
- C) Hundreds of feet
- D) none

36- What is the best way to minimize altimeter error?

- A) Set 29.92
- B) update altimeter setting
- C) Descend slowly
- D) ascend slowly

37- What does the pilot read when set QNH in flight?

- A) Indicated altitude
- B) pressure altitude
- C) Absolute altitude
- D) true altitude

38- What does the pilot read when set the actual height from surface?

- A) True altitude
- B) absolute altitude
- C) Indicated altitude
- D) pressure altitude

39- What does the pilot read when set the actual height of mean sea level?

- A) Pressure altitude
- B) indicated altitude
- C) Absolute altitude
- D) true altitude

40- What does the pilot read when set the standard pressure?

- A) Pressure altitude
- B) indicated altitude
- C) absolute altitude
- D) true altitude

41- When density altitude is equal to pressure altitude?

- A) in non-standard temperature
- B) standard temperature
- C) standard atmosphere
- D) standard pressure

42- Density altitude is.....

- A) pressure altitude corrected for non- standard temperature
- B) indicated altitude corrected for non- standard temperature
- C) absolute altitude corrected for non- standard temperature
- D) all answers are correct

43- What is the position of maneuvering speed on airspeed indicator?

- A) End of white arc.
- B) End of green arc.
- C) End of yellow arc.
- D) Not specified.

44- When the indicated and true altitude is same when the airplane is on the ground

- A) in ISA condition
- B) set 29.92
- C) set QNH
- D) none

45- When the indicated altitude is lower than true altitude

- A) Altimeter setting and temperature above than standard
- B) altimeter setting or temperature below than standard
- C) altimeter setting or temperature above than standard
- D) Altimeter setting and temperature below than standard

46- When the true altitude is lower than indicated altitude

- A) Pressure setting and temperature below than standard
- B) pressure setting or temperature below than standard
- C) pressure setting or temperature above than standard
- D) Pressure setting and temperature above than standard

47- What is the sources of power for gyro operations?

- A) Attitude indicator (vacuum), heading indicator (electric).
- B) Attitude indicator (electric), heading indicator & turn and slip indicator (vacuum).
- C) Attitude indicator & turn and slip indicator (vacuum), heading indicator (electric).
- D) Attitude indicator & heading indicator (vacuum), turn and slip indicator (electric).

48- What is acceptable altitude error for altimeter in FAA?

- A) 85 ft.
- B) 55 ft.
- C) 75 ft.
- D) 70 ft.

49- When the pilot flying from high pressure to low pressure the true altitude is than indicated altitude.

- A) Lower
- B) higher
- C) as same as
- D) none

50- When the pilot flying from low pressure to high pressure the true altitude is than indicated altitude:

- A) Lower
- B) as same as
- C) Lower first then higher
- D) higher

51- When the pilot flying from hot area to cold area the indicate altitude is than true altitude.

- A) Higher
- B) lower
- C) as same as
- D) none

52- When the pilot flying from cold area to warm area the indicted altitude is than true altitude.

- A) Higher
- B) lower
- C) as same as
- D) none

53- Which instrument show how fast the ambient pressure increase or decrease?

- A) Altimeter
- B) airspeed indicator
- C) VVI
- D) A & B & C are correct

54- Temperature has effect on

- A) Altimeter
- B) airspeed indicator
- C) VVI
- D) heading indicator

55- VVI is the instrument that shows

- A) Rate
- B) trend
- C) Rate after 6 to 12 sec
- D) all answers are correct

56- What is the immediate indication of VVI about change in pressure?

- A) Rate
- B) trend
- C) Trend after 6 to 9 sec
- D) RPM

57- Which instrument is be unreliable when pitot tube become clogged?

- A) altimeter-VVI
- B) VVI-airspeed indicator
- C) altimeter-airspeed indicator
- D) only airspeed indicator

58- Which instrument may be unreliable when static port be clogged?

- A) Altimeter
- B) VVI
- C) Airspeed indicator
- D) All answers are correct

59- Which instrument is drop to zero when static port be clogged?

- A) VVI
- B) altimeter
- C) Airspeed indicator
- D) All answers are correct

60- Which instrument is ``freeze`` if pitot static become clogged?

- A) VVI
- B) altimeter
- C) Airspeed indicator
- D) A&C

61- What would be the airspeed indicator when Pitot tube & drain opening hole be clogged?

- A) Drop to zero
- B) act as altimeter
- C) Act as VVI
- D) B&C

62- What would be the airspeed indicator after pilot tube become clogged but drain opening hole be open?

- A) Act as altimeter
- B) increase during descend
- C) Decrease during ascend
- D) drop to zero

63- What is the change in airspeed indicator when static port be clogged but Pitot tube be open?

- A) Increase during descend
- B) increase during ascend
- C) Decrease during descend
- D) drop to zero

64- In non-pressurize airplane the main static port be clogged and the pitot use alternate static port, the airspeed, altimeter & VVI may be....

- A) Slower, higher, climb
- B) greater, lower, descend
- C) Greater, higher, climb
- D) slower, lower, descend

65- In pressurize airplane the main static port be clogged and the pitot use alternate static port, the airspeed, and VVI may be....

- A) lower, climb
- B) lower, descend
- C) Higher, climb
- D) higher, descend

66- Which one is of following instrument is based on gyroscopic features?

- A) Attitude Indicator
- B) Direction gyro
- C) turn- coordinator
- D) all answers are correct

67- Which part of pitot-static system supply total pressure?

- A) Drain opening hole
- B) pitot tube
- C) Static port
- D) pressure chamber

68- In which part of airplane, Pitot tube has been mounted?

- A) Cabin
- B) above the flight deck
- C) Parallel to the thrust line
- D) above horizontal stabilizer

69- In which phase of flight the difference between indicated and calibrated airspeed is greatest & lowest:

- A) Slow speed-cruising speed
- B) slow speed-slow speed
- C) Cruising speed-slow speed
- D) cruising speed-cruising speed

70- At high altitude the airplane must fly slightly ----- to obtain equivalent pressure on the Pitot tube as sea level.

- A) Slower
- B) faster
- C) as same as
- D) faster if you are flying below 10000 ft.

71- The red line on an airspeed indicator means a maximum airspeed that:

- A) May be exceeded only if gear and flaps are retracted.
- B) May be exceeded if abrupt maneuvers are not attempted.
- C) May be exceeded only in smooth air.
- D) Should not be exceeded.

72- Which one is of following factor effect on VA

- A) Angle of attack
- B) weight
- C) Stall speed
- D) all answers are correct

73- What is the altimeter setting check tolerance that must be made before flight?

- A) $\pm 75\text{m}$
- B) $\pm 75\text{ ft.}$
- C) $\pm 25\text{ m}$
- D) $\pm 25\text{ ft.}$

74- What would be the pilot read when airplane is stationary in parking area and set QFE?

- A) Cockpit height
- B) zero
- C) Field elevation
- D) A & B are correct

75- What does altimeter show when airplane is on the ground and set QNH?

- A) Field elevation
- B) zero
- C) Cockpit height
- D) B & C are correct

76- Temperature rise is made by air compressibility & friction in the air.

- A) True
- B) false

77- When pilot flying from high pressure area to low pressure area without adjusting the correct altimeter setting the altimeter shows Than true altitude.

- A) Lower
- B) higher
- C) as same as
- D) first lower then higher

78- Which features of gyroscopic cause to left. turn tendency?

- A) Precession
- B) rigidity in space
- C) A & B are correct
- D) none

79- Which one of following statement is wrong?

- A) rigidity is a spinning mass tend to remain in fix position
- B) in precession the reaction to this force occur in the direction of rotation, approximately 90 ahead of point that force applied
- C) precession cause the error in some gyroscopic instrument
- D) All answers are incorrect

80- What is/are the source of gyroscopic instrument?

- A) Vacuum
- B) electrical
- C) a or b are correct
- D) static pressure

81- When suction pressure is too low which instrument does not provide reliable information?

- A) heading-attitude
- B) heading-altimeter
- C) attitude-altimeter
- D) B & C are correct

82- What information sense by turn coordinator?

- A) roll-yaw
- B) yaw-bank
- C) Bank & roll
- D) roll & pitch

83- Turn coordinator rotate about And Axis

- A) vertical-lateral
- B) lateral- longitudinal
- C) vertical-longitudinal
- D) A & B are correct

84- What information does show by ball in turn coordinator?

- A) Bank angle
- B) quantity of turn
- C) Quality of turn
- D) All answers are correct

85- Miniature and inclinometer of airplane show..... and.....

- A) Bank angle-coordinated flight
- B) rate of turn- coordinated flight
- C) Rate of turn-bank angle
- D) coordinated flight-bank angle

86- In standard rate turn the airplane make a orbit within:

- A) 30 sec
- B) 90 sec
- C) 60 sec
- D) 120 sec

87- How long does need to turn from heading 030 to heading 040 from left.?

- A) 1min 50 sec
- B) 1min 57 sec
- C) sec
- D) 2min

88- How long does need to make turn from heading 360 to 180 by one-half standard coordinate turn?

- A) 1min
- B) 2min
- C) 30 sec
- D) 1min 30 sec

89- The ball of inclinometer in turn coordinator is

- A) Balance indicator
- B) quality of turn
- C) Coordinate use of aileron & rudder
- D) All answers are correct

90- What is the position of turn coordinator's ball during level flight?

- A) Left. side
- B) right side
- C) lowest part of tube
- D) A & B are correct

91- Slip is.....

- A) rate of turn is too slow for bank angle
- B) rate of turn is too great for bank angle
- C) ball is in opposite direction of turn
- D) B & C are correct

92-Skid is.....

- A) rate of turn is too slow for bank angle
- B) rate of turn is too great for bank angle
- C) ball is in opposite direction of turn
- D) B & C are correct

93- In flight the pilot encounter to slip condition, the pilot shall:

- A) Decrease bank angle
- B) increase rudder
- C) Decrease power
- D) All answers are correct

94- To correct skid, the pilot shall:

- A) Increase bank angle
- B) increase rudder
- C) Increase power
- D) All answers are correct

95- How can pilot correct ball in turn coordinator?

- A) By rudder
- B) by aileron
- C) by elevator
- D) B & C are correct

96- Inclinator can help to recognize torque and adverse yaw:

- A) True
- B) false

97- During climb which direction the ball move

- A) Left.
- B) right
- C) lowest part
- D) A & C are correct.

98- To centralize ball during climb the pilot shall:

- A) Apply left. rudder
- B) decrease bank angle
- C) Step on the ball
- D) decrease RPM

99- The pitot system provides total pressure for:

- A) Airspeed indicator, vertical-speed indicator altimeter.
- B) Altimeter and vertical-speed indicator.
- C) Vertical-speed indicator.
- D) Airspeed indicator.

100- Which of the color coded markings on the airspeed indicator identifies the never exceed speed?

- A) Lower A/S limit of the yellow arc.
- B) Upper A/S limit of the white arc.
- C) Upper A/S limit of the green arc.
- D) The red radial line.

101- Which color-coded marking identifies the power-off stalling speed in a specified configuration?

- A) Upper A/S limit of the green arc.
- B) Upper A/S limit of the white arc.
- C) Lower A/S limit of the green arc.
- D) Lower A/S limit of the white arc.

102- Which of the color coded markings identifies the normal flap operating range?

- A) The lower limit of the white arc to the upper limit of the green arc.
- B) The green arc
- C) The white arc.
- D) The yellow arc.

103- Which of the color coded markings identifies the power off stalling speed with wing flaps and landing gear in the landing configuration?

- A) Upper A/S limit of the green arc
- B) Upper A/S limit of the white arc.
- C) Lower A/S limit of the green arc.
- D) Lower A/S limit of the white arc.

104- What is an important airspeed limitation that is not color coded on airspeed indicators?

- A) Never exceed speed.
- B) Maximum structural cruising speed.
- C) Maneuvering speed.
- D) Maximum flaps extended speed.

105- Which instrument would be affected by excessively low pressure in the airplane's vacuum system?

- A) Heading indicator.
- B) Airspeed indicator.
- C) Pressure altimeter.
- D) Mach indicator

106- If a suction gage indicates the pressure to be lower than the minimum limit, which of these air operated instruments would be?

- A) Vertical velocity indicator.
- B) Airspeed indicator.
- C) Pressure altimeter.
- D) Attitude indicator.

107- Select the true statement pertaining to the operations of a vertical speed indicator:

- A) A zero indication on the instrument indicates a level flight attitude.
- B) A 5 to 10 second lag occurs before the pressure within the instrument is stabilized.
- C) Turbulent air cause needle fluctuations, resulting unreliable indications.
- D) The instrument automatically compensates for temperature changes.

108- Which of the following airspeeds is identified by color coding on an airspeed indicator?

- A) The maximum gear operating or extended speed.
- B) The maximum structural cruising speed.
- C) The maximum maneuvering cruising speed.
- D) The stalling speed for all altitudes and configurations.

109- What effect have an increase in temperature on true airspeed?

- A) Direct effect.
- B) inversely effect.
- C) No change, because TAS increase only in low pressure.
- D) It depends on IAS and aircraft altitude.

110- Density altitude is the:

- A) Altitude reference to the standard datum plane.
- B) Pressure altitude corrected for nonstandard temperature.
- C) Altitude read directly from the altimeter.
- D) Altitude above the surface.

111- Under what condition is the indicated altitude the same as true altitude?

- A) If the altimeter has no mechanical error.
- B) When at sea level under standard conditions.
- C) When at 18000 ft with the altimeter set at 29.92.
- D) At any altitude if the indicated altitude is corrected for nonstandard sea level temperature and pressure.

112- As air density decreases, density altitude:

- A) increases when the temperature decreases.
- B) decreases when the temperature increases.
- C) Decreases.
- D) Increases

113- Which principle of gyro allow to turn coordinator gyro to sense rate of turn and rate of roll?

- A) precession
- B) Rigidity
- C) A or B
- D) A and B

114- total pressure from Pitot tube is directed to diaphragm outside the airspeed indicator:

- A) True
- B) False

115- Which of the following sentences is correct?

- A) Air density increase by temperature increase.
- B) As the pressure increase, density altitude will be increase.
- C) Warm air is denser than cold air.
- D) Wind has a direct effect on total time, which an aircraft can remain aloft..

116- Which of the following will occur if the indicated airspeed is constant and the density altitude increases?

- A) True airspeed will decrease, and groundspeed will increase.
- B) True airspeed will decrease, and groundspeed will decrease.
- C) True airspeed will increase, and groundspeed will decrease.
- D) True airspeed will increase, and groundspeed will increase.

117- What is the relationship between the density altitude and temperature?

- A) Direct relation.
- B) Inversely effect.
- C) It depends on atmospheric pressure.
- D) A & B are correct.

118- Which of the following items have greatest effect on air density?

- A) Humidity, Pressure, Dew point.
- B) Temperature, Pressure, Density altitude.
- C) Pressure, Density altitude, Humidity.
- D) Humidity, Temperature, Pressure.

119- which factor does effect on stall speed?

- A) Airplane attitude.
- B) Airplane weight.
- C) Temperature
- D) Atmospheric condition.

120- Pilots adjust their altimeter to the same altimeter setting because this:

- A) The conciliation of altimeter error due to position of static source.
- B) The elimination of a need to make in-flight calculation of true altitude.
- C) More accurate terrain clearance in mountainous areas.
- D) To provide better vertical separation of aircraft.

121- Pilots adjust their altimeter to the same altimeter setting because this:

- A) Eliminates altimeter error due to position of static source.
- B) Eliminates the need to make in-flight calculation of true altitude.
- C) Provide accurate terrain clearance in mountainous areas.
- D) Assure better vertical separation of aircraft.

122- Which statement is true regarding a sensitive altimeter?

- A) The altimeter will assure safe terrain clearance if adjusted to the proper altimeter setting.
- B) All aircraft flying at the same indicated altitude with identical altimeter settings will always be at the same true altitude.
- C) If corrections are made for nonstandard temperature and pressure, the altimeter will give an accurate indication relative to terrain clearance.
- D) The altimeter will indicate accurate altitude above terrain only when operating over flat terrain.

123- Inside the pressurize cabin during a high altitude flight when use alternate static port an altimeter indicates:

- A) Higher than actual flight altitude.
- B) Sea level.
- C) Actual flight altitude.
- D) Lower than actual flight altitude.

124- What is true altitude?

- A) Indicated altitude corrected for temperature.
- B) Actual height above terrain.
- C) Indicated altitude corrected for standard pressure.
- D) Actual height above mean sea level.

125- If the ambient temperature is warmer than standard at FL 350. What is the density altitude compared to pressure altitude?

- A) Lower than pressure altitude.
- B) The same as the pressure altitude.
- C) Impossible to determine without information.
- D) Higher than pressure altitude.

126- How long will it take when A/C turn from HDG 090° to 300° from right with standard rate turn?

- A) 60 Sec
- B) 50 Sec
- C) 70 Sec
- D) 90 Sec

127- As an airplane is rolled out of a 180 left. turn to straight and level flight on the attitude indicator the aircraft will be in a:

- A) Slight turn to the right and climbing slightly
- B) Slight turn to the left. and descending slightly
- C) Slight skid to the right and climbing slightly
- D) Slight slip to the left. and descending slightly

128- Attitude indicator provide correct indication of pitch and bank during Turn?

- A) 90° of turn
- B) 180° of turn
- C) 360° of turn
- D) 270° of turn

129- Errors in both pitch and bank indication on an attitude indicator are corrected when aircraft rolls out of a:

- A) 90° turn
- B) 180° turn
- C) 270° turn
- D) 360° turn

130- When an altimeter setting is not available at a departure airport, the sensitive altimeter should be set to indicate:

- A) The elevation of the departure airport corrected to mean sea level.
- B) Pressure altitude corrected nonstandard temperature.
- C) The elevation of the departure airport.
- D) 29.92" hg.

131- A line connecting the point of zero degrees' variation is called:

- A) isogonic's line.
- B) Agonic line.
- C) Deviation.
- D) Isoclinic

132- Compass errors from magnetic dip due to:

- A) Lines of magnetic parallel to the surface of the earth.
- B) The curve magnetic fields deflect downward toward poles.
- C) Compass tilt limit.
- D) All of the above.

133- Compass acceleration and deceleration error is maximum at:

- A) North and south.
- B) East and west.
- C) North and west.
- D) East and south.

134- The magnetic compass:

- A) Is a dependent unit uses a little electric current.
- B) Is a unit called direction seeking instrument using generator magnetic field.
- C) Is a self-contained unit is independent of external vacuum and use magnetism
- D) Is a reliable unit used for navigation in light airplanes and as a standby in modern jet airplanes

135- In the northern hemisphere a magnetic compass will normally indicate a turn toward the north if

- A) The aircraft is accelerated while on an east or west heading.
- B) The aircraft is decelerated while on an east or west heading.
- C) A right turn is entered from an east heading.
- D) A left. turn is entered from a west heading.

136- In the Northern Hemisphere, the magnetic compass will normally indicate a turn toward the south when:

- A) Left. turn is entered from an east heading.
- B) A right turn is entered from a west heading.
- C) The aircraft is accelerated while on an east heading.
- D) The aircraft is decelerated while on a west heading.

137- In the Northern Hemisphere, a magnetic compass will normally, indicate initially a turn toward the west if:

- A) A left. turn is entered from a north heading.
- B) A right Turn is entered from a north heading.
- C) An aircraft is decelerated while on a south heading.
- D) An aircraft is accelerated while on a north heading.

138- In the Northern Hemisphere, a magnetic compass will normally indicate initially a turn toward the east if:

- A) An aircraft is decelerated while on a south heading.
- B) An aircraft is accelerated while on a north heading.
- C) A right turn is entered from a north heading.
- D) A left. turn is entered from a north heading.

139- Which is true regarding a magnetic compass?

- A) Compass deviation it the angular difference true north and magnetic north.
- B) Magnetic variation is the deflection of the compass needles which is caused by attractions in the airplane.
- C) Magnetic dip increases with an increase in latitude.
- D) The direction of turn error is the same in the world.

140- Which instrument would be affected by low pressure as indicated on the suction gage?

- A) Vertical velocity indicator.
- B) airspeed indicator.
- C) Pressure altimeter.
- D) Heading indicator.

141- If the static pressure ports iced over while descending from altitude, the airspeed indicator would read:

- A) Zero.
- B) Low.
- C) High.
- D) Correctly.

142- Assume an altimeter indicates an altitude of 3,500 Ft.. MSL with an altimeter setting of 29.42" Hg what is the approximate pressure altitude?

- A) 4,000ft.
- B) 3,550ft.
- C) 3,450ft.
- D) 3,000ft.

143- If the ram air input to the pitot head of the pitot system becomes blocked, and drain hole be open the indicated airspeed will generally:

- A) Decrease as altitude is increase.
- B) Remain unchanged.
- C) Increase as altitude is increase.
- D) Drop to zero.

144- If both the ram air input and the drain hole of the pitot system becomes blocked, the indicated airspeed will generally:

- A) Vary excessively during level flight when the actual airspeed is varied.
- B) Decrease during climbs.
- C) Not change during level flight
- D) Increase during descends.

145- Static pressure is not used for:

- A) Airspeed indicator.
- B) Altimeter.
- C) Attitude indicator.
- D) A & B are correct.

146- What indicates the beginning part of white arc on airspeed indicator?

- A) Power off stall speed, in gear up and flaps up.
- B) Full power stall speed, in gear down and flaps up.
- C) Power off stall speed, in landing configuration.
- D) Power off stall speed, in gear down and flaps up.

147- What indicates the lowest on green arc?

- A) Power off stall speed in landing configuration.
- B) Full power stall speed, flaps up and gear up if equipped.
- C) Power off stall speed, flaps up and gear up if equipped.
- D) Full power stall speed, gear up and flaps down.

148- If a pilot changes the altimeter setting from 30.11 to 29.96 what is the approximate change in indication?

- A) Altimeter will indicate 15 Ft higher
- B) Altimeter will indicate 15 Ft lower
- C) Altimeter will indicate 150 Ft lower
- D) Altimeter will indicate 150 Ft higher

149- An altimeter is set to 29.84" Hg and the correct altimeter setting is 30.00" Hg If under these conditions a landing is made at an airport where the field elevation is 772 Ft. the altimeter would indicate approximately:

- A) 932ft.
- B) 160ft.
- C) 612ft.
- D) 772ft.

150- Enroute at FL250 the altimeter is set correctly. On descent a pilot fails to reset it to a local altimeter setting of 30.57. If the field elevation is 650 Ft.. and the altimeter is functioning properly what will it indicate after landing?

- A) Sea level
- B) 585ft.
- C) 715ft.
- D) 1,300ft.

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	D	26	C	51	A	76	A
2	C	27	A	52	B	77	B
3	A	28	C	53	C	78	A
4	C	29	D	54	C	79	D
5	B	30	B	55	D	80	C
6	D	31	A	56	B	81	A
7	D	32	D	57	D	82	A
8	D	33	B	58	D	83	C
9	A	34	C	59	A	84	C
10	B	35	A	60	B	85	B
11	A	36	B	61	B	86	D
12	C	37	A	62	D	87	B
13	A	38	B	63	A	88	B
14	B	39	D	64	C	89	D
15	D	40	A	65	B	90	C
16	A	41	B	66	D	91	A
17	B	42	A	67	B	92	D
18	B	43	D	68	C	93	A
19	D	44	C	69	A	94	A
20	A	45	A	70	B	95	A
21	C	46	A	71	D	96	A
22	A	47	D	72	B	97	B
23	B	48	C	73	B	98	C
24	D	49	A	74	D	99	D
25	B	50	D	75	A	100	D

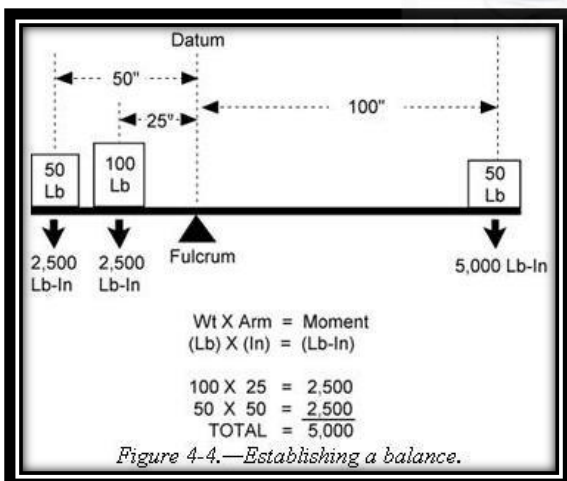
Question	Answer	Question	Answer	Question	Answer	Question	Answer
101	C	126	C				
102	C	127	A				
103	D	128	C				
104	C	129	D				
105	A	130	C				
106	D	131	B				
107	C	132	B				
108	B	133	B				
109	A	134	C				
110	B	135	A				
111	B	136	D				
112	D	137	B				
113	A	138	D				
114	A	139	C				
115	D	140	D				
116	D	141	C				
117	A	142	A				
118	D	143	D				
119	B	144	C				
120	D	145	C				
121	D	146	C				
122	A	147	C				
123	D	148	C				
124	D	149	C				
125	D	150	A				

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

MASS & BALANCE



1- How far will the C.G shift. if 750 pounds of cargo are moved from the aft compartment to the forward compartment?

Airplane gross weight 160,000 pounds
C.G prior to shift. 945 in aft of datum
Arm of FWD compartment660 in aft of datum
Arm of AFT compartment1,194 in aft of datum

- A) 3.2 inches
- B) 2.5 inches
- C) 2.0 inches
- D) 1.5 inches

2- Determine the maximum allowable load which may be carried in a cargo compartment on a pallet 85 by 68 inches:

Floor load limit 123 lbs/sq. ft.
Pallet weight..... 67 lbs
Tie down devices 27 lbs

- A) 4,765 lbs
- B) 4,843 lbs
- C) 5,674 lbs
- D) 4,932 lbs

3- What is the maximum allowable load which may be carried in a cargo compartment which has a floor load limit of 182 lbs/square foot?

Pallet size 102 in x 95 in
Pallet weight..... 93 lbs Tie
down devices49 lbs

- A) 12,284 pounds
- B) 12,390 pounds
- C) 12,106 pounds
- D) 12,068 pounds

4- Determine the maximum allowable load which may be carried on a pallet that has dimensions of 73 by 59 inches:

Floor load limit 177 lbs/sq. ft.

Pallet weight..... 82 lbs

Tie down devices 45 lbs

- A) 5,165 pounds
- B) 5,375 pounds
- C) 5,292 pounds
- D) 5,208 pounds

5- What is the maximum allowable load which may be carried on a pallet 75 x 75 inches in a cargo compartment that has a floor load limit of 175 lbs/square foot?

Pallet weight 87 lbs

Tie down devices 35 lbs

- A) 6,958 pounds
- B) 6,835 pounds
- C) 6,748 pounds
- D) 6,713 pounds

6- Given:

Aircraft weight2,800 lbs

CG 40" aft of datum

If 80 lbs of weight are added at 80" aft of datum the new CG will be:

- A) 42.5" aft of datum
- B) 37.6" aft of datum
- C) 38.9" aft of datum
- D) 41.1" aft of datum

7- An airplane with a gross weight of 185,500 lbs has the C.G located at 980 inches aft of datum. The arm of the forward hold is 440 inches the aft cargo hold is 1,150 inches if 600 lbs of cargo are shifted from the aft hold to the forward hold how far will the C.G shift forward:

- A) 1.27 inches
- B) 2.29 inches
- C) 3.00 inches
- D) 3.56 inches

8- An airplane's gross weight is 170,500 lbs and the C.G is located at 980 inches aft of datum. The arm of the forward cargo hold is 430 inches and the arm of the aft cargo hold is 1,130 inches if 800 lbs of cargo are shifted from the forward hold to the aft hold how far will the C.G shift. aft:

- A) 4.01 inches
- B) 3.28 inches
- C) 2.38 inches
- D) 1.87 inches

9- How far will the C.G shift. if 1,000 lbs of cargo are moved from the aft compartment to the forward compartment?

Airplane gross weight155,000 lbs
C.G prior to shift.....1,000" aft of datum
Arm of FWD compartment.....570" aft of datum
Arm of AFT compartment.....1,166" aft of datum

- A) 3.8 inches
- B) 2.5 inches
- C) 2.0 inches
- D) 1.5 inches

10- What is the new C.G location if 800 lbs of cargo are moved from the forward cargo hold to the aft cargo hold?

Airplane gross weight150,000 lbs
C.G prior to shift. 998.0" aft of datum
Arm of FWD compartment.....667.0" aft of datum
Arm of AFT compartment.....1,160" aft of datum

- A) 1,003.5 inches
- B) 1,000.6 inches
- C) 996.0 inches
- D) 994.8 inches

11- What is the new C.G location if 1,000 lbs of cargo are moved from the aft compartment to the forward compartment?

Airplane gross weight 155,000 lbs
C.G prior to shift.1,000" aft of datum
Arm of FWD compartment.....670" aft of datum
Arm of AFT compartment1,166" aft of datum

- A) 998.5 inches
- B) 998.0 inches
- C) 997.5 inches
- D) 996.8 inches

12- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 83x95 inches?

Floor load limit..... 169 lbs/sq. ft.
Pallet weight88lbs
Tie down devices.....37lbs

- A) 9,128 lbs
- B) 9,156 lbs
- C) 9,244 lbs
- D) 9,369 lbs

13- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 76 x76 inches?

Floor load limit.....184 lbs/sq. ft.
Pallet weight85lbs
Tie down devices.....36lbs

- A) 7,499 lbs
- B) 7,373 lbs
- C) 7,292 lbs
- D) 7,259 lbs

14- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 72 x 72 inches?

Floor load limit 179 lbs/sq. ft.
Pallet weight 91 lbs
Tie down devices 36 lbs

- A) 6,571 lbs
- B) 6,444 lbs
- C) 6,353 lbs
- D) 6,317 lbs

15- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 84 x 76 inches?

Floor load limit 184 lbs/sq. ft.

Pallet weight 77 lbs

Tie down devices 31 lbs

- A) 8,049 lbs
- B) 8,074 lbs
- C) 8,151 lbs
- D) 8,259 lbs

16- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 72 x 84 inches?

Floor load limit..... 177 lbs/sq. ft.

Pallet weight 87 lbs

Tie down devices29 lbs

- A) 7,550 lbs
- B) 7,434 lbs
- C) 7,347 lbs
- D) 7,318 lbs

17- What is the maximum allowable cargo weight that may be carried on a pallet which has dimensions of 70x70 inches?

Floor load limit 173 lbs/sq. ft.

Pallet weight..... 79 lbs

Tie down devices 35 lbs

- A) 5,772 lbs
- B) 5,807 lbs
- C) 5,886 lbs
- D) 6,000 lbs

18- GIVEN:

Weight D 160 lb. at 45" aft of datum

Weight E 170 lb. at 145" aft of datum

Weight F 150 lb. at 185" aft of datum

Based on this information where would the CG be located?

- A) 86.0" aft of datum
- B) 117.8" aft of datum
- C) 124.0" aft of datum
- D) 136.7" aft of datum

19- GIVEN:

Weight X 130 lb. at 17" aft of datum

Weight Y 110 lb. at 110" aft of datum

Weight Z 75 lb. at 210" aft of datum

Based on this information the CG would be located how far aft of datum?

- A) 89.1"
- b) 95.4"
- c) 106.9"
- d) 112.3"

20- GIVEN:

Weight A 120 lbs at 15" aft of datum

Weight B 200 lbs at 117" aft of datum

Weight C 75 lbs at 195" aft of datum

Based on this information the CG would be located how far aft of datum?

- A) 82.0"
- B) 109.0"
- C) 121.7"
- D) 100.8"

21- GIVEN:

Weight A 165 lb. at 135" aft of datum

Weight B 125 lb. at 115" aft of datum

Weight C 75 lb. at 85" aft of datum

The CG for the combined weights would be located how far aft of datum?

- A) 91.7"
- B) 111.6"
- C) 117.8"
- D) 128.4"

22- Given an aircraft loaded with a ramp weight of 3,550 pounds and having a CG of 95.0 approximately how much baggage would have to be moved from the rear baggage area at station 179 to the forward baggage area at station 42 in order to move the CG to 92.0?

- A) 55 pounds
- B) 62 pounds
- C) 78 pounds
- D) 85 pounds

23- Your airplane is loaded to a gross weight of 5000 pounds with three pieces of luggage in the rear baggage compartment. The CG is 98" aft of datum which is 2" aft of limits. If you move two pieces of luggage which together weight 100 pounds from the rear baggage compartment (145" aft of datum) to the front compartment (45" aft of datum) what is the new CG?

- A) 95.8" aft of datum
- B) 96.0" aft of datum
- C) 96.5' aft of datum
- D) 97.0" aft of datum

24- GIVEN:

Total weight	4,037 lbs
CG location	station 67.8
Fuel consumption	14.7 GPH
Fuel CG	station 68.0

After 1 hour 45 minutes of flight time the CG would be located at station:

- A) 67.79
- B) 68.79
- C) 69.78
- D) 70.78

25- An airplane is loaded as follows 80 lbs at 200 inches aft of datum 160 lbs at 90 inches aft of datum and 240 lbs at 60 inches aft of datum where would be the CG location?

- A) 128 inches aft of datum
- B) 93.3 inches aft of datum
- C) 12.8 inches aft of datum
- D) 9.3 inches aft of datum

26- Based on this information: the CG would be located how far aft of Datum?

Weight A.	115 lbs at 17`` aft of datum.
Weight B.	220 lbs at 118`` aft of datum.
Weight C.	8 lbs at 210`` aft of datum.

- A) 85.7`` inches
- B) 121.9`` inches
- C) 86.28`` inches

27- Based on this information: the CG would be located at:

Weight D. 145 lbs at 46`` aft of datum.
Weight E. 197 lbs at 134`` aft of datum.
Weight F. 103 lbs at 206`` aft of datum.

- A) 115.2 inches
- B) 122 inches
- C) 140.6 inches

28- What is the max load that could be added to station 140" without exceeding the aft CG limit?

Aircraft weight 6500 lbs
CG location station 89"
Aft CG limit station 89.5"

- A) 63.7 pounds
- B) 64.3 pounds
- C) 53.3 pounds

29- Could 120 pounds of weight be shifted from station 30.0 to station 110.0 without exceeding the aft CG limit?

Total weight 4850 lbs
CG location station 116.0
Aft CG limit station 118.0

- A) Yes; the CG would be located at station 116.19
- B) No; the CG would be located at station 118.15
- C) Yes; the CG would be located at station 117.97

30- Could 100 pounds of weight be shifted from station 140.0" to station 30" without exceeding the forward CG limit?

Aircraft weight 3,650 lbs
CG. Location St.115.0"
Forward CG limit St.112.0"

- A) No. the new CG would be located at 111.98".
- B) No. the new CG would be located at 101.98".
- C) Yes. the new CG would be located at 112.01".

31- What is the maximum weight that could be shifted from station 45.0" to station 145.0" without exceeding the Aft CG limit?

Total weight 4200 lbs
CG location station 70.0"
Aft CG limit station 72.5"

- A) 105 pounds.
- B) 145pounds
- C) 200pounds.

32- What is the new CG if 240 pounds of weight shift. from station 182.0" to station 73.0"?

Total weight **8500 lbs**
CG location **station 121"**

- A) 117.9
- B) 124.1
- C) 118.5

33- If 225 pounds of weight be shifted from station 64.0 to station 172.0" the CG would be at:

Total weight **10,340 lbs**
CG prior to shift. **station 110.0**

- A) 107.65
- B) 112.35
- C) 108.65

34- What will be the new CG, if 180 pounds of weight shift. from station 160.0" to station 60.0"?

Aircraft gross weight **7200 lbs**
CG prior to shift. **station 90"**

- A) 92.50"
- B) 88.75"
- C) 87.50"

35- Where would the CG be located, if 175 pounds of weight shift. from station 62.0 to station 157.0?

Aircraft gross weight **8300 lbs**
CG prior to shift. **station 96.0**

- A) 97.74
- B) 97.28
- C) 98.0

36- What load must be shifted from station 30.0" to station 130.0" to place CG at station 108.0"?

Aircraft weight **6530 lbs**
CG location **station 107.0**

- A) 653 pounds.
- B) 65 pounds.
- C) 57.1 pounds.

37- How much weight must shift. from station 133.0" to station 37.0" to put CG at station 90.0"?

Total weight **5600 lbs**
CG location **station 90.5".**

- A) 58.3 pounds
- B) 52.8 pounds
- C) 29.1 pounds

38- What load must be shifted from station 160.0" to station 70.0" to shift. CG 0.5 inch forward?

Total weight **7400 lbs**
CG location **station 89.0**

- A) 41.1 pounds
- B) 52.1 pounds
- C) 97.4 pounds

39- How much weight must shift. from station 95.0" to station 214.0" to place CG at station 130.0"?

Aircraft weight **8700 lbs**
CG prior to shift. **station 129.0**

- A) 73.1 pounds
- B) 103.5 pounds
- C) 102.3 pounds

40- Where would the CG be located, if 120 pounds of weight be added to station 59.0"?

Total weight **2800 lbs**
CG location **station 79.0**

- A) 78.31"
- B) 79.85"
- C) 78.17"

41- What would be the new CG if 170 pounds of weight be added to station 160.0?

Aircraft weight **2130 lbs**
CG location **station 82.0**

- A) 87.76"
- B) 84.88"
- C) 88.42"

42- Where would the CG be located if 60 pounds of weight be added to station 139.0"?

Total weight **1225 lbs**
CG location **station 84.0**

- A) 81.30"
- B) 86.56"
- C) 84.56"

43- What would be the new CG if 70 pounds of weight were added to station 60.0"?

Aircraft weight **1450 lbs**
CG location **station 82.0"**

- A) 83.01"
- B) 82.91"
- C) 80.98"

44- What load must be removed from station 30.0; to place CG at station 90.0?

Aircraft weight **6900 lbs**
CG location **station 89.0**

- A) 117.1 pounds.
- B) 115 pounds.
- C) 113.1 pounds.

45- How much weight must be removed from station 130.0" to place CG at station 89.0"?

Total weight **5100 lbs**
CG location **station 90.0**

- A) 124.4 pounds
- B) 122.2 pounds
- C) 127.5 pounds

46- What load must be removed from station 73.0"to place CG at station 142.0"?

Total weight **3300 lbs**
CG location **station 141.5"**

- A) 54.3 lbs
- B) 47.8 lbs
- C) 23.9 lbs

47- How much load must be removed from station 160.0"to place CG at station 80.5"?

Total weight **2900 lbs**
CG location **station 81.0"**

- A) 18.2 pounds
- B) 53.2 pounds
- C) 36 pounds

48- What would be the new CG location if 70 pounds of weight were removed from station 107"?

Total weight **1760 lbs**
CG location **station 102"**

- A) 101.19"
- B) 101.80"
- C) 107.20"

49- What would be the new CG location if 120 pounds of weight were removed from station 150"?

Total weight **2800 lbs**
CG location **station 103"**

- A) 100.06"
- B) 102.06"
- C) 100.89"

50- What is the location of CG if 60 pounds of weight are removed from station 70"?

Total weight **3420 lbs**
CG location **station 82"**

- A) 82.21"
- B) 84.20"
- C) 81.20"

51- What is the location of CG if 133 pounds of weight are removed from station 79.0?

Aircraft weight **6140 lbs**
CG location **station 104.0"**

- A) 104.55"
- B) 79.50"
- C) 105.35"

52- Total weight **4800 lbs**
CG located **st.88.0**
Fuel consumption **10.3 Gal/HR**
Fuel CG **st.89.0**

What will be the CG after 1:30 of flight?

- A) 87.98"
- B) 88.01"
- C) 87.63"

53- A/C weight **2730 lbs**
CG prior to shift. **St. 77.0**
fuel consumption **11.7Gal/HR**
(6.8 lbs/Gal)
Fuel CG **st.78.8**

After 1.45 of flight the CG will be located at:

- A) 76.34"
- B) 78.70"
- C) 76.90"

54- If the center of gravity is near the forward limit, the airplane will:

- A) Benefit from reduced drag due to the decrease in angle of attack.
- B) Require elevator trim, which will result in an increase in fuel consumption.
- C) Require less power for a given airspeed.
- D) Tend to over rotate during takeoff.

55- An aircraft is loaded 110 pounds over maximum certificated gross weight. if fuel is drained to bring the aircraft weight within limits, how much fuel should be drained?

- A) 15.7 gallons
- B) 16.2 gallons
- C) 17.1 gallons
- D) 18.4 gallons

56- When must the center of gravity be computed?

- A) After every 400 hours' inspection.
- B) Prior to every flight.
- C) At least every four years.
- D) During every yearly inspection.

57- Given:

Weight A. 63 lbs at 37`` aft of datum.

Weight B. 214 lbs at 146`` aft of datum.

Weight C. 26 lbs at 212`` aft of datum.

The CG would be located how far aft of datum?

- A) 98.95"
- B) 76.7"
- C) 129"

58- Where would the CG be located, if 110 pounds of weight were removed from station 140"?

Total weight	4300 lbs
CG location	station 103.0"

- A) 102.02"
- B) 102.05"
- C) 03.08"

59- Where would the CG be located, if 90 pounds of weight were removed from station 30.0?

Total weight	1340 lbs
CG location	station 80.5

- A) 83.89"
- B) 76.86"
- C) 84.13"

60- If 250 pounds of weight be removed from station 152" the CG would be located at:

Total weight 3675 lbs
CG location station 91"

- A) 95.54"
- B) 86.54"
- C) 86.90"

61- Could 100 pounds of weight be removed from station 30.0 without exceeding Aft CG limit?

Total weight 2800 lbs
CG location station 85.0"
Aft CG limit station 87.0"

- A) Yes, the new CG will be located at station 85.92"
- B) No, the new CG will be located at station 87.15"
- C) No, the new CG will be located at station 87.04"

62- Find the new CG if total moment change after gear and flap extension is 2350 in- lbs (FWD)

Total weight 4700 b
CG location st.82.5

- A) 83.0``
- B) Does not change.
- C) 82.0``

63- What is the new CG after gear and flap retraction, if total moment displacement is 8840 in- lbs (aft)?

Total weight 6800 lbs
CG prior to shift. St. 91.7``

- A) 92.0``
- B) 93.0``
- C) 90.4``

64- After gear and flaps retraction, there was a reduction in total moment by 10800 in- lbs where would the CG be located? (AFT)

Total weight 13520 lbs
CG. Location station 117``

- A) 117.8"
- B) 116.2"
- C) 118.0"

65- How much weight must be added to bring CG within its limits?

Total weight **2930 lbs**

CG location. **92.0 "**

FWD. CG. Limit. **92.5"**

ARM of FWD Hold : **45"**

ARM of Aft Hold : **145"**

27.9 lbs

27.6 lbs

30.8 lbs

66- How much weight should be added to St. 37 to shift. CG 1 inch FWD?

Total weight **3270 lbs**

CG location **89"**

61.7lbs

69.0 lbs

64.1 lbs

67- How much weight must be added to St. 149.0 to place CG at St. 91.5?

Total weight **6147 lbs CG**

location **St 90"**

106.9 lbs

160.4 lbs

156.3 lbs

68- How much weight must be added to St. 39.0 to place CG at St. 89.0?

Total weight **5900 lbs**

CG prior to shift. **St. 90.0**

115.7 lbs

93.4 lbs

118.0 lbs

69- Could 100 pounds of weight be added to station 130 without exceeding the aft CG limit?

Total weight **2780 lbs**

CG location **St. 84.**

Aft CG limit **St. 86.**

Yes, the new CG will be at St. 85.6".

No, the new CG will be at St. 86.5".

Yes, the new CG will be at St. 82.4".

70- Could 110 pounds of weight be added to station 40 without exceeding the FWD CG limit?

Total weight **4550 lbs**
CG location **St.80.5"**
FWD CG limit **St.80.0"**

- A) No, the new CG will be at St. 79.03"
- B) No, the new CG will be at St. 79.5"
- C) Yes, the new CG will be at St. 80.95"

71- What is the new CG if 120 lbs of weight be added to St. 148"?

Total weight **4350 lbs**
CG location **St. 102"**

- A) 103.2"
- B) 103.5"
- C) 100.8"

72- An aircraft is loaded to 90,300 lbs and CG is at St. 754 inches. What would be the new CG if 340 lbs of CARGO shift. from FWD CARGO compartment St. 285``. To AFT CARGO St.635``?

- A) 636.3"
- B) 752.6"
- C) 755.3"

73- What is the new CG location if 670 lbs of cargo are moved from forward cargo hold to the aft cargo hold?

Airplane weight **161,200 lbs**
CG. prior to shift. **887``**
Arm of FWD. hold **409``**
Arm of aft hold **1007``**

- A) 884.51"
- B) 889.49"
- C) 1003.5"

74- Determine the new CG if 730 lbs of cargo are moved from St. 1150`` to FWD arm of 548``?

Aircraft gross weight **169,000 lbs**
CG prior to shift. **901.6``**

- A) 904.2``
- B) 1149.8``
- C) 899.0``

75- What load must be moved from St. 50.0 to St. 162.0 to place CG at its aft CG limit?

Airplane gross weight 2630 lbs

CG location St. 88.0

Aft CG Limit. St. 89.0

- A) 25 lbs
- B) 21.65 lbs
- C) 23.5 lbs

76- What load must be moved from St. 174.0 to St. 45.0 to place CG at extremely FWD CG limit?

Airplane gross weight 3720 lbs

CG location St. 90.0

FOW. CG limit. St. 88.5

- A) 43.3 lbs
- B) 28.8 lbs
- C) 31.6 lbs

77- An aircraft is loaded to 6450 pounds with CG located at St. 92.0 inches, which is 1 inch aft of aft limit. How much load must be moved from St. 169.0`` to St. 57.0`` to move CG. To its limits?

- A) 83.7 lbs
- B) 57.6 lbs
- C) 184.3 lbs

78- Where would the new CG be located if 70 lbs of load are removed from St. 144.0``?

Airplane gross weight 3900 lbs

CG. Prior to shift. St. 89.0

- A) 90.0``
- B) 88.0``
- C) 50.9``

79- What would be the new CG location, if 133 pounds of weight were removed from St. 49.0``?

Airplane gross weight 2850 lbs

CG. Prior to shift. St. 100.0

- A) 1023.8``
- B) 51.3``
- C) 102.5``

92- How much weight must be added to St. 73" to place CG at St. 102"?

Airplane gross weight 7750 lbs

CG location st.103.5"

- A) 267.2 lbs
- B) 381.1 lbs
- C) 400.9 lbs

93- An aircraft is loaded to 8820 pounds and CG located at St. 105 which is 1.3 inch out of FWD. limit. How much load (lbs) must be added to St. 211 to put CG in its range?

- A) 109.5
- B) 102.2
- C) 84.3

94- Define the Useful Load:

- A) Pay Load plus basic empty weight.
- B) Pay Load plus Usable Fuel.
- C) Basic empty weight plus Usable Fuel Load.
- D) That part of the pay Load which generates revenue.

95-The "Useful Load" is:

- A) TOW - fuel mass.
- B) BEW plus fuel load.
- C) Basic empty weight plus Usable Fuel Load.
- D) Ramp weight minus Dry Operating Mass.

96-The maximum mass to which an aero plane may be loaded, prior to engine start, is:

- A) Maximum certificated taxi (ramp) mass.
- B) Maximum Regulated Taxi (Ramp) Mass.
- C) Maximum Certificated Takeoff Mass.
- D) Maximum Regulated Takeoff Mass.

97-What is the Zero Fuel Weight?

- A) MTOW minus fuel to destination minus fuel to alternative airfield.
- B) Maximum allowable mass of the aircraft with no usable fuel on board.
- C) Operating weight minus the fuel load.
- D) Actual loaded mass of the aircraft with no usable fuel on board.

98-By adding to the Dry operating weight the payload, we get:

- A) Ramp weight.
- B) Takeoff weight.
- C) Zero fuel weight.
- D) Landing weight.

99-Basic empty weight is the mass of the airplane less:

- A) Usable fuel and Payload
- B) Usable fuel,
- C) Payload, portable water and lavatory chemicals
- D) Unusable fuel, portable water and lavatory chemicals

100-The Zero Fuel weight of an airplane is always:

- A) the Takeoff Mass minus the fuselage fuel mass
- B) the Takeoff Mass minus the wing fuel mass
- C) the Takeoff Mass minus the Takeoff Fuel Mass
- D) the Maximum Takeoff Mass minus the Takeoff Fuel Mass

101-The Actual Zero Fuel weight is equal to the:

- A) Basic Empty weight plus the fuel loaded.
- B) Operating Mass plus all the payload
- C) Basic operating weight plus the payload
- D) Actual Landing weight plus Trip Fuel

102-Which of the following alternatives corresponds to Zero Fuel weight?

- A) Operating mass plus load of passengers and cargo.
- B) The mass of an aero plane with no usable fuel.
- C) Operating mass plus load of passengers.
- D) Takeoff Mass minus fuel to destination and alternate.

103-For the purpose of completing the weight and Balance documentation, the Basic empty weight is defined as:

- A) Weight of standard airplane optional equipment, unusable fuel.
- B) The Total Mass of airplane excluding all usable fuel.
- C) The Total Mass of the airplane excluding all payload.
- D) The Total Mass of the aero plane excluding crew and crew baggage.

104-At the flight preparation stage, the following parameters in particular are available for determining the mass of the aircraft:

1- Basic empty weight

2- Payload

Which statement is correct?

- A) The basic empty weight includes fixed equipment needed to carry out a flight.
- B) The payload is the mass of the aero plane without takeoff fuel.
- C) The basic empty weight includes takeoff fuel.
- D) The basic empty weight includes the payload.

105- Basic empty weight of an aero plane includes:

- A) Fuel and passenger's baggage and cargo.
- B) Unusable fuel and reserve fuel.
- C) Weight of standard airplane, optional equipment, unusable fuel.
- D) Passengers baggage and cargo.

106-The Total Mass of an aircraft including crew, crew baggage, plus usable fuel and payload, is referred to as:

- A) Maximum Zero Fuel Mass.
- B) Zero Fuel Mass.
- C) Landing weight.
- D) Ramp weight.

107-Allowed payload is the difference between:

- A) Ramp weight and Basic empty weight.
- B) Allowed Takeoff weight and Basic Mass plus Trip Fuel.
- C) Allowed Takeoff weight and Basic empty weight.
- D) Allowed zero fuel weight and Dry operating weight.

108-The Zero Fuel weight & Dry operating weight:

- A) Differ by the sum of the weight of usable fuel plus Payload.
- B) Are the same value.
- C) Differ by the value of the payload.
- D) Differ by the weight of usable fuel.

109-The term "Useful Load" as applied to an airplane includes:

- A) payload only.
- B) Payload plus usable fuel.
- C) The revenue-earning portion of payload only.
- D) The revenue-earning portion of payload plus usable fuel.

110-For the purpose of completing the Mass and Balance documentation, the Ramp weight is considered to be zero fuel weight plus:

- A) Payload.
- B) Unusable fuel & engine oil.
- C) Trip Fuel Mass.
- D) Usable fuel.

111-payload is the:

- A) Zero Fuel Mass minus Dry operating weight.
- B) Basic empty weight minus the disposable load.
- C) Basic empty weight minus the Variable Load.
- D) Takeoff Mass minus Zero Fuel Mass.

112-While making mass and balance calculation for a particular airplane, the term "Empty Mass" applies to the sum of airframe, engine(s), fixed ballast plus:

- A) All the consumable fuel and oil, but not including any radio or navigation equipment installed by manufacturer.
- B) All the oil, fuel, and hydraulic fluid but not including crew and payload.
- C) Unusable fuel and full operating fluids.
- D) All the oil and fuel.

113-The Term Maximum Zero Fuel Mass" consists of:

- A) The maximum mass authorized for a certain aero plane not including the fuel load and operational items.
- B) The maximum mass authorized for a certain aero plane not including payload and fuel load.
- C) The maximum permissible mass of an aero plane with no usable fuel.
- D) The maximum mass for some aero planes including the fuel load and the Traffic Load.

114-Which is true of the airplane Basic empty weight?

- A) It is ramp weight minus fuel load.
- B) It is ramp weight minus useful load and equipment
- C) It is Ramp weight minus payload
- D) It is the actual Takeoff Mass, less payload.

115-The Actual Takeoff weight is equivalent to:

- A) Actual Zero Fuel weight plus the payload.
- B) Basic empty weight plus equipment and crew, usable fuel and the payload.
- C) Basic empty weight plus the usable fuel.
- D) Actual Landing Mass plus the takeoff fuel.

116-The Payload is defined as:

- A) The Total Mass of flight crew, passengers, baggage, cargo and usable fuel.
- B) The Total Mass of crew and passengers excluding any baggage or cargo.
- C) The Total Mass of passengers, baggage and cargo.
- D) The Total Mass of passengers, baggage, cargo and usable fuel.

117-The Maximum Zero Fuel Weight of an aircraft is:

- A) The maximum permissible Takeoff Mass of the aircraft.
- B) The maximum permissible mass of an aircraft with no usable fuel.
- C) The maximum permissible mass of an aircraft with zero payload.
- D) The maximum permissible Landing Mass.

118-With regards to the Maximum Zero Fuel Weight (MZFW):

- A) It is the maximum weight that an aircraft can be loaded to without usable fuel.
- B) It is lower than the Maximum Takeoff Weight by the weight of a payload.
- C) is more relevant to aircraft with fuselage fuel tanks.
- D) is important as exceeding the MZFW may mean that there is insufficient lift. to get the aircraft airborne.

119-What is the Zero Fuel weight?

- A) The maximum permissible mass of an aero plane with no Usable Fuel Mass.
- B) The mass of the aircraft at the start of the taxi (at departure from the loading gate).
- C) Basic empty weight plus payload, equipment, crew but excluding fuel.
- D) The empty weight of an aero plane plus standard items such as: unusable fuel and liquids; lubricating oil in engine and other auxiliary units.

120-Takeoff Mass is described as:

- A) The Takeoff Mass subject to departure airfield limitations.
- B) The mass of an aero plane including everything and everyone contained within it at the start of the takeoff run.
- C) Basic empty weight & fuel but without Payload.
- D) The lowest of performance limited and structural limited TOW.

121-Given:

Maximum Structural Takeoff Mass: 146900 kg

Maximum Structural Landing Mass: 93800 kg

Maximum Zero Fuel Mass: 86400 kg

Trip Fuel 27500 kg

Block Fuel 35500 kg

Engine starting and taxi fuel: 1000 kg

The Maximum Takeoff Mass is equal to:

- A) 120300 kg
- B) 121300 kg
- C) 113900 kg
- D) 120900 kg

122-Given:

Dry operating mass:	38000 kg
Maximum Structural Takeoff Mass:	72000 kg
Maximum Landing Mass:	65000 kg
Maximum Zero Fuel Mass:	61000 kg
Fuel burn:	8000 kg
Takeoff Fuel:	10300 kg

The Maximum allowed Takeoff Mass and payload are respectively:

- A) 73000 kg and 27000 kg.
- B) 71300 kg and 25300 kg.
- C) 73000 kg and 24700 kg.
- D) 71300 kg and 23000 kg.

123-Given an airplane with:

Maximum Structural Landing Mass:	125000 kg
Maximum Zero Fuel Mass:	108500 kg
Maximum Structural Takeoff Mass:	155000 kg
Dry operating mass:	82000 kg
Scheduled Trip Fuel:	17000 kg
Reserve Fuel:	5000 kg

Assuming performance limitation is not restricting, the maximum permitted Takeoff Mass and Maximum payload are respectively:

- A) 125500 kg and 21500kg
- B) 130500 kg and 31500 kg
- C) 130500 kg and 26500 kg
- D) 125500 kg and 26500 kg

124-The Dry operating Mass of an aircraft is 30000 kg. The masses of the following items are:

Payload:	665kg
Fuel at takeoff:	3000kg
Unusable fuel:	120kg

The zero fuel weight is:

- A) 30300 kg
- B) 30665 kg
- C) 38300 kg
- D) 30785 kg

125-The Dry operating weight of an aircraft is 2000 kg. The Maximum Takeoff Mass is 3500 kg. The Block Fuel Mass is 550 kg, and the Taxi Fuel Mass is 50 kg. The available mass of payload is:

- A) 1500 kg
- B) 950 kg
- C) 1000 kg
- D) 1450 kg

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	41	A	81	B	121	D
2	B	42	B	82	C	122	D
3	C	43	C	83	B	123	C
4	A	44	B	84	C	124	B
5	D	45	A	85	A	125	C
6	D	46	C	86	A		
7	B	47	A	87	C		
8	B	48	B	88	B		
9	A	49	C	89	B		
10	B	50	A	90	B		
11	D	51	A	91	A		
12	A	52	A	92	C		
13	D	53	C	93	A		
14	D	54	B	94	B		
15	A	55	D	95	D		
16	D	56	B	96	A		
17	A	57	C	97	D		
18	C	58	A	98	C		
19	B	59	C	99	A		
20	D	60	B	100	C		
21	C	61	C	101	C		
22	C	62	C	102	B		
23	B	63	B	103	A		
24	A	64	A	104	A		
25	B	65	A	105	C		
26	C	66	C	106	D		
27	B	67	B	107	D		
28	B	68	C	108	C		
29	C	69	A	109	B		
30	A	70	B	110	D		
31	A	71	A	111	A		
32	A	72	C	112	C		
33	B	73	B	113	C		
34	C	74	C	114	B		
35	C	75	C	115	B		
36	B	76	A	116	C		
37	C	77	B	117	B		
38	A	78	B	118	A		
39	A	79	C	119	C		
40	C	80	A	120	B		

Flight Operation Officer Note

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METEOROLOGY



- 1- Which force in the northern hemisphere act at a right angle to the wind and deflect it to the right until parallel to the isobars?**
- A) Centrifugal.
 - B) Pressure gradient.
 - C) Coriolis.
 - D) Net force
- 2- Turbulence that is encountered above 15000 ft., AGL not associated with cumuliform cloudiness, including thunderstorm should be reported as:**
- A) Convective turbulence.
 - B) Severe turbulence.
 - C) Orographic turbulence.
 - D) Clear air turbulence.
- 3- A situation most conducive to the formation of advection fog is:**
- A) An air mass moving inland from the coastline during the winter.
 - B) A warm, moist air mass settling over a cool surface under no wind conditions.
 - C) A warm, moist air mass on the windward side of a mountain.
 - D) A light breeze moving colder air over a water surface.
- 4- Which procedure should be used when penetrating turbulent air?**
- A) Set power for maneuvering speed and maintain constant air speed with pitch control.
 - B) Set power for maneuvering speed and maintain a level flight attitude.
 - C) Reduce air speed to maneuvering speed and maintain altitude with power control and airspeed with pitch control.
 - D) Reduce air speed to maneuvering speed and maintain airspeed with power control and altitude with pitch control.
- 5- Which type of approach and landing is recommended during gusty wind conditions?**
- A) A power off approach and power off landing.
 - B) A power on approach and power on landing.
 - C) A power off approach and power on landing.
 - D) A power on approach and power off landing.
- 6- The location of radiation fog would most likely occur are:**
- A) Water surfaces.
 - B) Mountain valleys.
 - C) Level inland areas.
 - D) Mountain Slopes.

7- The most hazardous wind shear near the ground often is produced by:

- A) Thunderstorm.
- B) surface winds exceeding 25 knots.
- C) rugged terrains.
- D) occluded fronts.

8- Which type clouds can be expected, when an unstable air mass is to ascend a mountain slope?

- A) Stratified clouds with intermittent showers.
- B) Layered clouds with little vertical development.
- C) Stratified clouds with considerable associated turbulence.
- D) Clouds with extensive vertical development.

9- Dynamic hydroplaning (airplane skimming on a wet runway) occurs at:

- A) high speeds when there is standing water on the runway.
- B) only at low speed when there is standing water on the runway.
- C) high speed with only a thin film of water on the runway.
- D) low speed with only a thin film of water on the runway.

10-What term is used to describe hydroplaning, which occurs when an airplane tire is effectively held off a smooth runway surface by steam created by friction?

- A) Viscous hydroplaning.
- B) Frictional hydroplaning.
- C) Reverted rubber hydroplaning.
- D) Dynamic hydroplaning.

11-The amount of water vapor which air can largely depends on:

- A) the dew point.
- B) air temperature.
- C) stability of air.
- D) relative humidity.

12-How are haze layers cleared or dispersed?

- A) By convective mixing in cool night air.
- B) Wind or movement of air.
- C) Heating during the day.
- D) B & C are correct.

13-What are some characteristics of unstable air?

- A) Poor visibility, steady rain, and clear icing.
- B) Good visibility, steady rain, and rime icing.
- C) Poor visibility, showers, and clear icing.
- D) Good visibility, showers and cumuliform clouds.

14-A temperature inversion forms:

- A) Only in summer.
- B) Only in winter.
- C) An unstable layer of air.
- D) A stable layer of air.

15-The most frequent type of ground or surface based temperature inversion is that produced by:

- A) Terrestrial radiation on a clear, relatively still night.
- B) warm air being lifted rapidly aloft. in the vicinity of mountainous terrain.
- C) the movement of colder air under warm air, or the movement of warm air over cold air.
- D) widespread sinking of air within a thick layer aloft. resulting in heating by compression.

16-In which situation is advection fog most likely to form?

- A) A warm, moist air mass on the windward side of mountains.
- B) An air mass moving inland from the coast in winter.
- C) A light breeze blowing colder air out to sea.
- D) Warm, moist air settling over a warmer surface under no-wind conditions.

17-In which environment is aircraft structural ice most likely to have the highest accumulation rate?

- A) Cumulus clouds.
- B) Cirrus clouds.
- C) Stratus clouds.
- D) Freezing rain.

18-What visible indicates extreme turbulence in thunderstorms?

- A) Cumulonimbus clouds, very frequent lightning, and roll clouds.
- B) Base of the clouds close to the surface heavy rain and hail.
- C) Low ceiling and visibility hail and precipitation static.
- D) Lightning, roll clouds, low ceilings and visibility and precipitation static.

19-Which thunderstorms generally produce the most severe conditions, such as heavy hail and destructive winds?

- A) Warm front thunderstorms.
- B) Squall line thunderstorms.
- C) Nocturnal air mass thunderstorms.
- D) Daytime air mass thunderstorms.

20-Standard sea level pressure is:

- A) 29.92 inches of mercury.
- B) 14.7 psi.
- C) 1013.25 MB.
- D) All answers are correct.

21-At night when wind flows down the mountain it is called a:

- A) mountain wind.
- B) valley wind.
- C) westerly wind.
- D) trade wind.

22-Which of the following definitions are correct?

- A) The movement of a cold front is usually faster and the slope of the cold front steep.
- B) The slope of the cold front has a gradual slope than warm front.
- C) The cold front produces a severe turbulence.
- D) The warm front moves faster than cold front.

23-Which statement is correct?

- A) Cloud are divided into four families according to height range.
- B) Steady precipitation in contrast to showers preceding a front is an indication of stratiform clouds with little or no turbulence.
- C) Temperature inversion produced by terrestrial radiation on calm & clear night.
- D) All answers are correct are correct.

24-Select the best statement:

- A) Drop pressure always associated with the passage of frontal system.
- B) Change in wind direction is always associated with the passage of frontal system.
- C) Temperature change is always a good indication of frontal passage.
- D) All answers are correct are correct.

25-Precipitation trailing beneath clouds that evaporate before reaching the ground are called?

- A) Frontal fog.
- B) Foehn wind.
- C) Virga.
- D) Fog.

26-Which statement is correct?

- A) An air mass is a body of air that covers an extensive area and has uniform temperature and pressure.
- B) An air mass is a body of air that has extensive turbulence and associated with uniform temperature and moisture.
- C) An air mass covers an extensive area and has uniform temperature and moisture.
- D) A & C are correct.

27-Which statement is correct?

- A) Every physical process of weather is accomplished by, or the result of a pressure difference.
- B) Every physical process of weather is accomplished by heat exchange.
- C) Every physical process of weather is accomplished by Coriolis force.
- D) None of above.

28-Which statement is correct?

- A) When cold air mass moving over warm surface stratiform clouds, turbulence and poor visibility will produce.
- B) When warm air mass moving over cold surface cumuliform clouds, turbulence and good visibility is expected.
- C) When cold air mass settle down it will be produced turbulence.
- D) None of above.

29-Which statement is correct?

- A) When temperature and temperature dew point spread increase relative humidity increase.
- B) When temperature and temperature dew point are equal we will have fog.
- C) When temperature and temperature dew point spread decrease relative humidity increase.
- D) B & C are correct.

30-Which statement is correct?

- A) A removal of water vapor and sinking decrease stability.
- B) Gray or dark massive cloud layer belongs high clouds.
- C) Terrestrial radiation on clear relatively still night may produce temperature inversion.
- D) B & C are correct.

31-Which statement is correct?

- A) Difference temperature creating different in pressure and cause wind.
- B) Water droplet and ice crystal continue to growth by condensation and sublimation.
- C) Wind shear can be expected at any level both horizontal and vertical direction
- D) All answers are correct are correct.

32-Which statement is correct?

- A) Water droplet increase in size with colliding and merging together.
- B) Water droplet increase in size with evaporation and sublimation.
- C) Water vapor increase with condensation and sublimation.
- D) All answers are correct are correct.

33-Which of the following clouds indicate convective turbulence?

- A) Alto cumulus standing lenticular (ACSL).
- B) Towering cumulus (TCU).
- C) Nimbostratus (NS).
- D) Cirrus (CI).

34-What is the feature of the air in low pressure area?

- A) Area where descending air and then outward motion occurs.
- B) Area where inward and upward occurs.
- C) Is an area of rising air and then descending.
- D) None of above.

35-Which statement is true regarding squall lines?

- A) They are no frontal and contains sever weather.
- B) They associated with fast moving cold front only.
- C) They are associated with 15 kts winds at least for one minute.
- D) A & B are correct.

36-The most turbulence portion of mountain wave is the:

- A) lenticular cloud.
- B) roll cloud.
- C) cap cloud.
- D) 1 & 2 are correct.

37-Which statement is true regarding mountain wave?

- A. They are always indicated by the presence of a lenticular clouds.
- B. They are generally stationary over the mountain.
- C. They are sometimes marked by stationary lens-shaped clouds.
- D. They are found on the wind ward side of mountain.

38-Suppose an airport has elevation of 4500 ft. assuming a standard temperature dew point laps rate. If the temperature at this airport is 70 F and dew point is 52 F the base of the cloud by lifting process would have located approximately?

- A) 8500 MSL.
- B) 4500 AGL.
- C) 4500 MSL.
- D) 8500 AGL.

39-For a given temperature and pressure if humidity increase the density will be:

- A) Remain unchanged.
- B) increase.
- C) decrease.
- D) First increase then decreases.

40-In the international standard atmosphere, the temperature at mean sea level is:

- A) 15° C
- B) 10° C
- C) 25° C
- D) 20° C

41-Water vapor is:

- A) visible as cloud.
- B) visible as cloud, fog and frost.
- C) an invisible gas.
- D) Invisible liquid

42-with increasing temperature, the capability of air to retain humidity will:

- A) increases.
- B) remains constant.
- C) decreases.
- D) first increase then decreases.

43-with increasing temperature, the rate of saturation will be:

- A) increases.
- B) remains constant.
- C) decreases.
- D) First increase then decreases.

44-Super cooled is the term applied to water drops which:

- A) have formed below the dew point temperature.
- B) are existing as liquid below 0 C.
- C) have formed below the wet bulb temperature.
- D) Invisible gas with temperature below 10 C

45-The temperature to which air must be cooled at constant pressure to become saturated is:

- A) cloud base temperature.
- B) dew point temperature.
- C) wet bulb temperature.
- D) Super cool temperature.

46-A temperature inversion indicates a state of the atmosphere, which is:

- A) absolutely stable.
- B) absolutely unstable.
- C) conditionally unstable.
- D) Conditionally stable.

47-On clear night inland, the stability of the lowest layers of the atmosphere:

- A) will decrease.
- B) will not change.
- C) will increase.
- D) First increase then decreases

48-The Dry adiabatic lapse rate value is:

- A) 1.5° C/1000 ft.
- B) 1.98° C/1000 ft.
- C) 3° C /1000 ft.
- D) 2.5° C /1000 ft.

49-Clouds names are classified by:

- A) rain bearing.
- B) type of stability.
- C) composed only of water drops.
- D) Shape of cloud

50-Which one of the following cloud has lowest cloud base?

- A) altostratus.
- B) nimbostratus
- C) Stratus
- D) Cirrus

51-If altocumulus is seen ahead of the aircraft, this indicates:

- A) increasing stability.
- B) increasing instability.
- C) improving weather to probably cloudless skies.
- D) Cold front is approaching

52-Thunderstorms are caused by:

- A) thunder and lightning.
- B) anvil cumulonimbus.
- C) instability, humidity, lifting action.
- D) Stable air lift. by warm front

53-Frontal thunderstorms are mainly associated with:

- A) warm front.
- B) Fast moving cold front.
- C) ridges of high pressure.
- D) Area low pressure

54-If a cumulonimbus has developed a large anvil:

- A) it has reached the beginning of the most active (mature) stage.
- B) it is in the most active (mature) stage.
- C) it has reached the third or dissipating stage.
- D) it has reached the End of the most active (mature) stage.

55-When flying through a turbulent air increasing speed:

- A) will enable the storm to be penetrated safely in the shortest time.
- B) will probably cause the aircraft to suffer a high speed stall.
- C) will greatly increase the risk of structural failure.
- D) Will decrease stall speed.

56-To minimize the effect of lightning striking an aircraft in flight, the pilot should:

- A) wear dark glasses and turn the cockpit lighting to maximum.
- B) turn off all the radios and unnecessary electric.
- C) engage the auto pilot and relax.
- D) Decent to lower altitude.

57-For radiation fog to form, the requirements are:

- A) light wind up to 10 knots, high humidity and instability.
- B) cloudless inland night, high humidity and wind 2 to 8 knots.
- C) clear sky, calm to 2 knots wind and high humidity.
- D) Clear sky with turbulence.

58-Advection fog forms:

- A) only over mountain
- B) only over sea.
- C) over land
- D) only over valley

59-When turbulence causes changes in altitude and/or attitude but aircraft control remains positive that should be reported it as:

- A) light.
- B) severe.
- C) moderate.
- D) heavy

60-Which type of jet stream can be expected to cause the greater turbulence?

- A) A straight jet stream associated with a low-pressure trough.
- B) A curving jet stream associated with a deep low-pressure trough.
- C) A jet stream occurring, during the summer at the lower altitude.
- D) Polar jet stream at mid latitude.

61-A significant wind shear can be associated with:

- A) a surface inversion with calm conditions.
- B) low pressure area.
- C) thunderstorms or squall line.
- D) Warm front

62-The minimum vertical wind shear value critical for probable moderate or greater turbulence is:

- A) 5 knots per 1000 feet.
- B) 6 knots per 1000 feet.
- C) 8 knots per 1000 feet.
- D) 4 knots per 1000 feet.

63-The thickness of stratosphere is approximately:

- A) 20 miles.
- B) Above 18 miles.
- C) 19-22 miles.
- D) Bellow 22 miles.

64-Most of weather phenomena may occur at the:

- A) Troposphere.
- B) Tropopause.
- C) Stratosphere.
- D) All above.

65-A thin layer of the atmosphere at the top of the troposphere is called?

- A) Ionosphere.
- B) Tropopause.
- C) Stratosphere.
- D) Haze layer.

66-An elongated area of low pressure is:

- A) low.
- B) ridge.
- C) trough.
- D) col.

67-When air is heated, its molecules -----, it becomes ----- and ----- than surrounding.

- A) packed more - more dense - heavier.
- B) packed more - less dense - lighter.
- C) spread apart - more dense - heavier.
- D) spread apart - less dense - lighter.

68-Connecting lines of equal pressure points is called:

- A) isoline.
- B) isobar.
- C) isotach.
- D) isotherm.

69-When isobars are ----- the pressure gradient is considered to be ----- and wind speed is -----.

- A) widely apart - weak - low.
- B) widely apart - strong - low.
- C) close together - weak - strong.
- D) Close together - strong - low.

70-A ----- gradient tends to produce ----- wind, while a ----- gradient result in ----- wind.

- A) strong - strong - weak - lighter.
- B) strong - lighter - weak - strong.
- C) strong - light - weak - no.
- D) weak - light - strong - no.

71-When air moves from high pressure to low pressure, Coriolis force deflects this air to the ----- in the -----.

- A) right - both hemisphere.
- B) left. - southern hemisphere.
- C) right - both hemisphere.
- D) right - northern hemisphere.

72-Within about ----- of the ground, friction causes by the earth's surface ----- the moving air and -----:

- A) 2500 ft. - slow - divert winds from its path along the isobars.
- B) 2000 ft. - increase - below winds along the isobars.
- C) 2000 ft. - slow - divert winds from its path along the isobars.
- D) 10000 ft. - slow - below winds along the isobars.

73-The ----- air flow from the high pressure at 30° N to the ----- area deflect to the ----- and to the southern area deflect to the -----.

- A) low level - northern - right - left.
- B) high level - northern - left. - right
- C) low level - northern - right - right also
- D) high level - low pressure - left. - left. also

74-When cold dense air spills over mountain and flow down the slope, the descending wind is called:

- A) Katabatic wind.
- B) Fall wind.
- C) Foehn wind.
- D) Gravity wind.

75-When water vapor changes to liquid then ----- take place and its latent heat is -----

- A) condensation - released.
- B) sublimation - absorbed.
- C) evaporation - absorbed.
- D) condensation - absorbed.

76-If the temperature of a parcel of air ----- it can hold ----- water vapor than before and relative humidity will -----.

- A) rise - less - decrease.
- B) drop - more - increase.
- C) drop - less - decrease.
- D) rise - more - decrease.

77-Condensation and sublimation are the process that change ----- water vapor into states that are readily -----.

- A) invisible - seen.
- B) invisible - drop from clouds.
- C) visible - drop from clouds.
- D) visible - seen.

78-One of the following temperature dew point spread is favorite condition, which fog forms.

- A) 2° F.
- B) 2° C.
- C) 4° F.
- D) B & C.

79-Thunderstorm formation requires following essential condition:

- A) High moisture - Convectonal lifting - Cumuliform clouds.
- B) Unstable condition - Lifting force - High moisture.
- C) Unstable condition - Cumuliform clouds - High moisture.
- D) Lifting force- High moisture - CB clouds.

80-The lifting action may be provided by several factors such as:

- A) Orographic lifting - Frontal lifting - convectonal lifting.
- B) Orographic lifting - Radiation lifting - convectonal lifting.
- C) Orographic lifting - Rising terrain lifting - convectonal lifting.
- D) Rising terrain lifting - Frontal lifting - Daily heating lifting.

81-When in a thunderstorm the updraft continues to increase up to speed of 6000 ft./min and severe turbulence and most violent weather occurs the thunderstorm is in:

- A) the end of mature stage.
- B) dissipating stage.
- C) mature stage.
- D) cold front thunderstorm.

82-The layer between two air mass is known as:

- A) cold front.
- B) front.
- C) warm front.
- D) stationary front.

83-A pilot may encounter hail in flight at ----- and even when no hail is reaching the surface.

- A) an especial altitude and within the storm.
- B) all altitude and within the storm.
- C) all altitude and within or outside the storm.
- D) an especial altitude and within or outside the storm.

84-Some typical characteristic of cold type air mass is:

- A) Unstable condition - Turbulence - Cumuliform clouds and showers precipitation.
- B) Unstable condition - No Turbulence - Stratiform clouds and showers precipitation.
- C) Stable condition - Stratiform clouds - Good visibility.
- D) Rough air - Stratiform clouds - showery and fog weather condition.

85-What is approximate base of the cumulus clouds if the temperature at 2000 ft. MSL is 70° F and dew point is 61° F:

- A) 3000 ft. AGL.
- B) 4000 ft. MSL.
- C) 2000 ft. MSL.
- D) 8000 ft. AGL.

86-Which weather condition is an example of a non-frontal instability band?

- A) Squall line.
- B) Advection fog.
- C) Front genesis.
- D) Frontal T.S.

87-What is a feature of air movement in a high pressure area?

- A) Rapid change in stability.
- B) Ascending from the surface high to lower pressure at higher altitude.
- C) Moving outward from the high at high altitudes and into the high at the surface.
- D) Descending to the surface and then outward.

88-Which type of clouds are indicative of very strong turbulence?

- A) Nimbostratus.
- B) Cirrocumulus.
- C) Standing lenticular.
- D) Altocumulus.

89-Which statement is true concerning the in-flight hazard of hail?

- A) Large hailstone is entirely composed of clear ice.
- B) Tropical and subtropical thunderstorm contain more hail than thunderstorm in northern hemisphere.
- C) Hail may be thrown outward from a storm cloud for several miles.
- D) Hail is usually produced by altocumulus clouds.

90-Hail is an in-flight hazard is most likely to be associated with:

- A) cirrocumulus clouds.
- B) cumulonimbus clouds.
- C) stratocumulus clouds.
- D) cumulus clouds.

91-The most severe weather conditions such as heavy hail, destructive winds and tornadoes are generally associated with:

- A) fast moving warm front.
- B) squall line and steady state thunderstorms.
- C) slow moving cold front.
- D) slow moving warm front.

92-Which of the following is considered to be the most hazardous condition associated with thunderstorm?

- A) Intense rain.
- B) Lighting.
- C) Icing.
- D) Wind shear and turbulence.

93-Which statement is true regarding squall lines?

- A) They are always associated with cold front.
- B) They are non-frontal and often contains sever steady state thunderstorm.
- C) They form slowly but move rapidly.
- D) They are associated with frontal systems only.

94-The downdrafts and rain starts and rain reach the ground when a thunderstorm cell is in ----- stage and the cell has reached a height 2500 ft. or more.

- A) mature
- B) Thermal
- C) cumulus
- D) dissipating

95-Air mass thunderstorm most often result from:

- A) movement of a cold & moist air mass over warm ground with surface heating
- B) movement of a warm unstable air mass.
- C) Frontal lifting
- D) fast moving cold front.

96-An instability line, which is narrow non-frontal line or band of convective activities with fully developed thunderstorm is:

- A) cold front thunderstorm.
- B) fast moving cold front thunderstorm.
- C) squall.
- D) air mass thunderstorm.

97-All thunderstorm hazards reach their greatest intensity during:

- A) cumulus stage.
- B) mature stage.
- C) dissipating stage.
- D) development stage.

98-Above the troposphere there are ----- atmospheric layers and the first one is -----

- A) many more - stratosphere
- B) three more - stratosphere
- C) only one - tropopause
- D) four more - tropopause

99-Which of the following is correct?

- A) The atmosphere is composed of about %78 nitrogen, %20 oxygen, %1 ozone and %1 of other gases.
- B)The atmosphere is composed of about %78 nitrogen, %21 oxygen, and %1 of other gases.
- C)The atmosphere is composed of about %78 nitrogen, %20 oxygen, %0.1 water vapor and %9 of other gases.
- D) All answers are correct.

100- The thickness of troposphere varies; it slopes upward from about ----- at the poles to ----- at the equator.

- A) 20000 ft. - 60000 ft.
- B) 18000 ft. - 54000 ft.
- C) 20000 ft. - 30000 ft.
- D) 50000 ft. - 60000 ft.

101- Convection occurs when ----- rises and is replaced by -----.

- A) warm air - cooler air
- B) warm air - cool air
- C) cool air - cooler air
- D) cool air - warm air

102- Connected equal pressure points with lines drawn on weather charts called:

- A) pressure.
- B) Isobars.
- C) pressure gradient.
- D) A & B together are correct.

103- When isobars widely apart:

- A) The gradient is considered to be weak.
- B) The wind flow is slow.
- C) Air flow from the cool dense air to warm less dense air in a slow speed.
- D) All answers are correct are correct.

104- What is the approximate base of the cumulus clouds if the temperature at 2,000 feet MSL is 10 °C. and the dew point is 1 °C?

- A) 3,000 feet MSL.
- B) 4,000 feet MSL.
- C) 6,000 feet MSL.
- D) 5,000 feet MSL.

105- If clouds form as a result of very stable, moist air being forced to ascend a mountain slope, the clouds will be

- A) cirrus type with no vertical development or turbulence.
- B) cumulus type with considerable vertical development and turbulence.
- C) stratus type with little vertical development and little or no turbulence.
- D) stratus type with vertical development and no turbulence.

106- What determines the structure or type of clouds which will form as a result of air being forced to ascend?

- A) The method by which the air is lifted.
- B) The stability of the air before lifting occurs.
- C) The relative humidity of the air after lifting occurs.
- D) The type of pressure area which causes turbulence.

107- Which cloud types would indicate convective turbulence?

- A) Cirrus clouds.
- B) Nimbostratus clouds.
- C) Towering cumulus clouds.
- D) Altostratus

108- Advection fog has drifted over a coastal airport during the day. What may tend to dissipate or lift. this fog into low stratus clouds?

- A) Nighttime cooling.
- B) Surface radiation.
- C) Wind 15 knots or stronger.
- D) Wind 5 knot or stronger.

109- A situation most conducive to the formation of advection fog is:

- A) a light breeze push colder air over a water surface.
- B) an air mass moving inland from the coastline during the winter.
- C) a warm, moist air mass settling over a cool surface under no-wind conditions.
- D) a warm, moist air mass settling over a cool surface under calm conditions.

110- In what ways do advection fog, radiation fog, and steam fog differ in their formation or location?

- A) Radiation fog is restricted to land areas; advection fog is most common along coastal areas; steam fog forms over a water surface.
- B) Advection fog deepens as wind speed increases up to 20 knots; steam fog requires calm or very light wind; radiation fog forms when the ground or water cools the air by radiation.
- C) Steam fog forms from moist air moving over a colder surface; advection fog requires cold air over a warmer surface; radiation fog is produced by radiational cooling of the ground.
- D) Advection fog deepens as wind speed decreases up to 5 knots; steam fog requires light wind; radiation fog forms when the ground or water cools the air by radiation.

111- Fog produced by frontal activity is a result of saturation due to :

- A) nocturnal cooling.
- B) adiabatic cooling.
- C) evaporation of precipitation.
- D) Terrestrial lifting.

112- Which in-flight hazard is most commonly associated with warm fronts?

- A) Advection fog.
- B) Radiation fog.
- C) Precipitation-induced fog.
- D) Steam fog.

113- Which feature is associated with the tropopause?

- A) Constant height above the Earth.
- B) Abrupt change in temperature lapse rate.
- C) Absolute upper limit of cloud formation.
- D) Abrupt change in pressure laps rate

114- Moisture is added to air by:

- A) sublimation and condensation.
- B) evaporation and condensation.
- C) evaporation and sublimation.
- D) Condensation and melting

115- What is the reason of ice pellets if encountered at 8,000 feet?

- A) Freezing rain at higher altitude.
- B) You are approaching an area of thunderstorms.
- C) You will encounter hail if you continue your flight.
- D) You are approaching an area of cold front.

116- From which measurement of the atmosphere can stability be determined?

- A) Atmospheric pressure.
- B) The ambient lapse rate.
- C) The dry adiabatic lapse rate.
- D) The standard lapse rate.

117- Which is true regarding actual air temperature and dew point temperature spread?

The temperature spread

- A) decreases as the relative humidity decreases.
- B) decreases as the relative humidity increases.
- C) increases as the relative humidity increases.
- D) increases as the relative humidity unchanged.

118- Which conditions are favorable for the formation of a surface based temperature inversion?

- A) Clear, cool nights with calm or light wind.
- B) Area of unstable air rapidly transferring heat from the surface.
- C) Broad areas of cumulus clouds with smooth, level bases at the same altitude.
- D) Clear, cool nights with strong wind

119- What minimum distance should exist between intense radar echoes before any attempt is made to fly between these thunderstorms?

- A) 20 miles.
- B) 30 miles.
- C) 40 miles.
- D) 50 miles.

120- The jet stream and associated clear air turbulence can sometimes be visually identified in flight by:

- A) dust or haze at flight level.
- B) long streaks of cirrus clouds.
- C) a constant outside air temperature.
- D) long streaks of CB clouds

121- The strength and location of the jet stream is normally:

- A) weaker and farther north in the summer.
- B) stronger and farther north in the winter.
- C) stronger and farther north in the summer.
- D) weaker and farther south in the summer

122- In the Northern Hemisphere, the wind is deflected to the:

- A) right by Coriolis force.
- B) right by surface friction.
- C) left. by Coriolis force.
- D) Left. by net force.

123- A high pressure area covers part of the Mediterranean Sea and coastal region during the summer. What surface wind direction is likely at an airport at the coast on a sunny afternoon?

- A) Land to sea.
- B) Sea to land.
- C) Variable.
- D) Parallel to the coastline.

124- What is the most frequent wind in valleys, caused by thermal effects?

- A) Mountain wind by day.
- B) Mountain wind by night.
- C) Valley wind by day.
- D) Valley wind by night.

125- At the top of standing waves, in mountainous regions, the cloud most likely to be encountered is:

- A) altocumulus lenticularis.
- B) cirrostratus.
- C) cirrus.
- D) cumulus mediocris.

126- Standing waves are likely when:

- A) wind speeds are uniform with height.
- B) the atmosphere is uniformly stable.
- C) the wind direction is at 45° to the ridge of the hills.
- D) none of the above.

127- In addition to a stable layer of air over a substantial mountain range, the conditions most favorable to the development of standing waves are:

- A) significant moisture loss due to precipitation, rapid lowering of the tropopause in the area of the mountain range.
- B) steep dry adiabatic lapse rate, wind speed increasing and changing direction rapidly with increase in height.
- C) conditional instability, wind speed constant from a direction parallel to the mountain range.
- D) wind speed excess of 20 kts at the surface and increasing with height, wind direction perpendicular to the general direction of the range.

128- Which cloud type may indicate the presence of severe turbulence?

- A) Altocumulus lenticularis.
- B) Stratocumulus.
- C) Cirrocumulus.
- D) Nimbostratus.

129- What degree of turbulence, if any, is likely to be encountered while flying through a cold front in the summer over Central Europe at FL 100?'

- A) Moderate turbulence in NS cloud.
- B) Severe turbulence in CB cloud.
- C) Light turbulence in CB cloud.
- D) Light turbulence in ST cloud.

130- On a clear summer day, turbulence caused by solar heating is most pronounced:

- A) immediately after sunset.
- B) during the early afternoon.
- C) during early morning hours before sunrise.
- D) about midmorning.

131- Which of the following statements is true?

- A) gale has an average speed of 33 kts or more.
- B) gust is a squall which lasts for several minutes.
- C) The more stable the atmosphere, the more turbulence.
- D) The more stable the atmosphere, the less turbulence.

132- Thermal turbulence is caused by:

- A) wing-tip vortices.
- B) vertical movements of air due to convection.
- C) movement of air over mountainous terrain.
- D) movement of air over smooth ground surface.

133- Fair weather cumulus often is an indication of:

- A) a high risk of thunderstorms.
- B) poor visibility at surface.
- C) smooth flying conditions below the cloud level.
- D) Turbulence at and below them.

134- The amount of water vapour which air can hold largely depends on:

- A) relative humidity.
- B) air temperature.
- C) stability of air.
- D) dew point.

135- The average slope of a warm front is approximately:

- A) 1:150
- B) 1:250
- C) 1:500
- D) 1:80

136- The dew point temperature:

- A) cannot be equal to the air temperature.
- B) is always lower than the air temperature.
- C) is always higher than the air temperature.
- D) can be equal to the air temperature.

137- Relative humidity:

- A) is higher in cool air than in warm air.
- B) is higher in warm air than in cool air.
- C) increases if the air is cooled whilst maintaining the vapour pressure constant.
- D) decreases if the air is cooled whilst maintaining the vapour pressure constant.

138- Relative humidity depends on:

- A) temperature of the air only.
- B) pressure of the air only.
- C) moisture content of the air only.
- D) moisture content and temperature of the air.

139- Which of the following statements is true of the dew point of an air mass?

- A) It can be used to estimate the air mass's relative humidity even if the air temperature is unknown.
- B) It can be higher than the temperature of the air mass.
- C) It can be used together with the air pressure to estimate the air mass's relative humidity.
- D) It can only be equal to, or lower, than the temperature of the air mass .

140- During the late afternoon an air temperature of +12 °C and a dew point of +5 °C were measured. What temperature change must occur during the night in order to induce saturation?

- A) It must decrease to +6 °C.
- B) It must decrease by 5°C.
- C) It must decrease to +5 °C.
- D) It must decrease to +7 °C.

141- Dew point is defined as:

- A) the temperature below which the change of state in a given volume of air will result in the absorption of latent heat.
- B) the lowest temperature at which evaporation will occur for a given pressure.
- C) the lowest temperature to which air must be cooled in order to reduce the relative humidity.
- D) the temperature to which moist air must be cooled to become saturated at a given pressure.

142- When a given mass of air descends, what effect will it have on relative humidity?

- A) It increases up to 100%, then remains stable.
- B) It increases.
- C) It remains constant.
- D) It decreases,

143- The difference between temperature and dew point is greater in:

- A) air with low temperature.
- B) moist air.
- C) air with high temperature and high moisture.
- D) dry air.

144- The difference between air temperature and dew point temperature is popularly called the "spread". As spread increases, relative humidity:

- A) increases.
- B) decreases.
- C) stays the same.
- D) first decreases and then increases.

145- As a parcel of air cools, its ability to hold water vapor:

- A) decreases.
- B) increases.
- C) remains unaltered.
- D) depends, whether the parcel is rising or no.

146- Moist air is:

- A) denser than dry air.
- B) warmer than dry air.
- C) less dense than dry air.
- D) colder than dry air.

147- Where is the usual location of a thermal low?

- A) Over the arctic region.
- B) Over the polar region.
- C) Over the surface of a dry, sunny region.
- D) Over the surface of a humid, cold region.

148- The temperature at which a parcel of air becomes saturated if it cools is called:

- A) dew point temperature.
- B) saturation temperature.
- C) condensation temperature.
- D) freezing temperature.

149- The process by which water vapor is transformed directly into ice is known as:

- A) supercooling.
- B) depositing.
- C) super saturation.
- D) radiation cooling.

150- In which of the following changes of state is latent heat released?

- A) Liquid to gas.
- B) Solid to liquid.
- C) Solid to gas.
- D) Gas to liquid.

151- When water evaporates into unsaturated air:

- A) relative humidity is decreased.
- B) heat is released.
- C) relative humidity is not changed.
- D) heat is absorbed.

152- A super cooled droplet is:

- A) a water droplet that is mainly frozen.
- B) a droplet still in liquid state at a temperature below freezing.
- C) a small particle of water at a temperature below -50 °C.
- D) a water droplet that has been frozen during its descent.

153- Super cooled droplets can be encountered:

- A) only in winter at high altitude.
- B) in winter only in high clouds.
- C) only in winter above 10.000 ft.
- D) at any time of the year.

154- Clouds, fog or dew will always be formed when:

- A) relative humidity reaches 98%.
- B) water vapour is present.
- C) water vapour condenses.
- D) temperature and dew point are nearly equal.

155- How are high level condensation trails formed that are to be found occasionally behind jet aircraft?

- A) Only through unburnt fuel in the exhaust gases.
- B) Through a decrease in pressure, and the associated adiabatic drop in temperature at the wing tips while flying through relatively warm but humid air.
- C) Through water vapour released during fuel combustion.
- D) In conditions of low humidity, through the particles of soot contained in the exhaust gases.

156- Evaporation is the change of:

- A) liquid water to water vapour.
- B) water vapour to ice.
- C) invisible water vapour to liquid water.
- D) ice directly to water vapour.

157- When water vapour condenses into water droplets, there is a:

- A) release of heat energy that increases density of the surrounding air.
- B) Sublimation.
- C) release of heat energy that makes the surrounding air warmer.
- D) none of the above.

158- What is sublimation?

- A) The change of state from ice to water.
- B) The change of state from water to water vapour.
- C) The change of state from water vapour to water.
- D) The change of state from ice to water vapour.

159- What is freezing?

- A) The change of state from ice to water.
- B) The change of state from water to water vapour.
- C) The change of state from water vapour to water.
- D) The change of state from water to ice.

160- A layer can be:

- A) unstable for unsaturated air and conditionally unstable.
- B) stable for saturated air and unstable for unsaturated air.
- C) unstable for unsaturated air and neutral for saturated air.
- D) stable for unsaturated air and unstable for saturated air.

161- Absolute instability exists whenever the environmental lapse rate:

- A) exceeds the saturated adiabatic lapse rate.
- B) exceeds the dry adiabatic lapse rate.
- C) is less than the saturated adiabatic lapse rate.
- D) is between the dry and saturated adiabatic lapse rate.

162- An inversion is a layer of air which is:

- A) absolutely unstable.
- B) absolutely stable,
- C) conditionally unstable.
- D) conditionally stable.

163- What is the dry adiabatic lapse rate per 1.000 ft.?

- A) 1,5 °C
- B) 2,0°C
- C) 3,0 °C
- D) 3,5 °C

164- If the surface temperature is 15°C, then the temperature at 10.000 ft. in a current of ascending unsaturated air is:

- A) 5°C
- B) 0 °C
- C) -15°C
- D) -5°C

165- A sample of moist but unsaturated air may become saturated by:

- A) expanding it adiabatically.
- B) raising the temperature.
- C) lowering the pressure, keeping temperature constant.
- D) compressing it adiabatically.

166- The decrease in temperature, per 100 meters in an unsaturated rising parcel of air is:

- A) 0,65 °C
- B) 2°C
- C) 1 °C
- D) 0,5 °C

167- The rate of cooling of ascending saturated air is less than the rate of cooling of ascending unsaturated air because:

- A) water vapour absorbs the incoming heat from the sun.
- B) moist air is heavier than dry air.
- C) water vapour doesn't cool as rapidly as dry air.
- D) heat is released during the condensation process.

168- If a saturated air mass descends down a slope its temperature increases at:

- A) the same rate as if the air mass were dry.
- B) a lower rate than in dry air, as evaporation absorbs heat.
- C) a lower rate than in dry air, as condensation gives out heat.
- D) a higher rate than in dry air, as it gives up latent evaporation heat.

169- Which of the following statements concerning the lifting of a parcel of air is correct?

- A) Unsaturated parcels cool less rapidly than saturated parcels.
- B) Unsaturated parcels cool more rapidly than saturated parcels.
- C) Unsaturated parcels cool at a rate of 0,65 °C/100 m.
- D) Saturated parcels always cool at a rate of 0,65 °C/100 m.

170- Which one of the following precipitation types gives the most severe icing?

- A) Snowfall.
- B) Mixed rain and snow.
- C) Freezing rain.
- D) Ice pellets.

171- What weather condition would you expect at a squall line?

- A) Strong steady rain.
- B) Thunderstorms.
- C) Fog.
- D) Strong whirlwinds reaching up to higher levels.

172- In an air mass with no clouds the surface temperature is 15 °C and the temperature at 1.000 m AGL is 13 °C. This layer of air is:

- A) unstable.
- B) stable.
- C) a layer of heavy turbulence.
- D) conditionally unstable.

173- A moist but unsaturated parcel of air becomes saturated by:

- A) lowering the parcel to a lower level.
- B) lifting the parcel to a higher level.
- C) moving the parcel to an area with lower pressure and equal temperature.
- D) moving the parcel to an area with higher pressure and equal temperature.

174- During an adiabatic process heat is:

- A) neither added nor lost.
- B) added.
- C) lost.
- D) added but the result is an overall loss.

175- The dry adiabatic lapse rate:

- A) has a constant fixed value.
- B) is greater in summer than in winter.
- C) is greater during the night than during the day.
- D) has a variable value.

176- What is the final temperature of unsaturated surface air at 12 °C, which rises to 6.000 ft.?

- A) +30 °C
- B) +18 °C
- C) -30 °C
- D) -6 °C

177- The standard value of the ELR is:

- A) 1,5 °C 1000 ft.
- B) 2,0 DC 1000 ft.
- C) 3,0 DC 1000 ft.
- D) it varies daily.

178- An ELR of 2,9 DC per 1.000 it, is by definition:

- A) stable.
- B) conditionally stable.
- C) unstable.
- D) conditionally unstable.

179- A layer is conditionally unstable if the air:

- A) becomes stable by lifting it.
- B) is stable for saturated air and unstable for dry air.
- C) is unstable for saturated air and stable for dry air.
- D) is unstable for saturated air as well as for dry air.

180- Absolute instability in the atmosphere will occur when the environmental lapse rate is:

- A) greater than both saturated adiabatic lapse rate and dry adiabatic lapse rate.
- B) less than saturated adiabatic lapse rate.
- C) less than both saturated adiabatic lapse rate and dry adiabatic lapse rate.
- D) greater than saturated adiabatic lapse rate but less than dry adiabatic lapse rate. When the LR is greater than 3 °C/1000 ft. the air is absolute unstable.

181- An unstable air mass is forced to ascend a mountain slope. What type of clouds can be expected?

- A) Stratiform clouds with a temperature inversion.
- B) Stratiform clouds with considerable turbulence.
- C) Layer-like clouds with little vertical development.
- D) Clouds with considerable vertical development and associated turbulence.

182- In the lower levels of the atmosphere when the environmental lapse rate is greater than saturated adiabatic lapse rate but less than dry adiabatic lapse rate, the air mass is described as being:

- A) conditionally unstable.
- B) stable.
- C) unstable.
- D) absolutely unstable.

183- The stability in a layer increases by advection of:

- A) cold air in the lower part.
- B) warm air in the lower part.
- C) dry air in the upper part.
- D) moist air in the lower part.

184- Which statement is correct for an absolutely unstable atmosphere?

- A) Visibility is good between showers.
- B) The environmental lapse rate is less than $1\text{ }^{\circ}\text{C}/1100\text{ m}$.
- C) Clouds are mainly of the stratiform type.
- D) The dry adiabatic lapse rate is more than $1\text{ }^{\circ}\text{C}/1100\text{ m}$.

185- Unsaturated air moving downwards is heated at a rate of:

- A) dry adiabatic.
- B) environmental lapse rate.
- C) saturated adiabatic.
- D) ambient lapse rate.

186- The weather is clear and the temperature decreases uniformly and rapidly as you climb (approaching $3,2\text{ }^{\circ}\text{C}$ per 1.000 ft.), you have an indication of:

- A) stable air.
- B) unstable air.
- C) saturation.
- D) sublimation.

187- Which term applies when the temperature of the air changes by compression or expansion with no heat added or removed?

- A) Katabatic
- B) Advection
- C) Adiabatic
- D) Atmospheric

188- From which of the following pieces of information can the stability of the atmosphere be derived?

- A) Dry adiabatic lapse rate.
- B) Pressure at the surface.
- C) Surface temperature.
- D) Environmental lapse rate.

189- Which thunderstorms are the more difficult to forecast and detect?

- A) Squall line thunderstorms.
- B) Air mass thunderstorms.
- C) Frontal thunderstorms.
- D) Cumulus thunderstorms because they are smaller.

190- Which statement is true for the lifting of an air parcel?

- A) Unsaturated parcels cool more rapidly than saturated.
- B) Saturated parcels cool more rapidly than unsaturated.
- C) An air parcel always cools at the dry adiabatic lapse rate.
- D) A stable air mass must be present.

191- The following weather report is a:

EDDM 241322 VRB03KT 1500 HZ OVC004 BECMG 1517 OOOO0KT 0500 FG VV002 TEMPO 2022 0400 FG VV001

- A) METAR.
- B) 24 hour TAF.
- C) SPECI.
- D) 9 hour TAF.

192- Which of the following is a cause of stratus forming over flat land?

- A) Radiation during the night from the Earth surface in moderate wind.
- B) Unstable air.
- C) Convection during the day.
- D) The release of latent heat.

193- What process in an air mass leads to the creation of wide spread NS, AS and ST cloud coverage?

- A) Convection process.
- B) Sinking.
- C) Lifting.
- D) Radiation.

194- Which of the following clouds are classified as medium level clouds in temperate regions?

- A) Ci, cc.
- B) SC, NS.
- C) AS, AC.
- D) CS, ST.

195- Which of the following types of clouds are evidence of unstable air conditions?

- A) ST, CS
- B) CU, CB.
- C) SC, NS.
- D) Ci, SC.

196- A cumulonimbus cloud at mid-latitudes in summer contains:

- A) only water droplets.
- B) ice crystals, water droplets and super cooled water droplets.
- C) only ice crystals.
- D) ice crystals and water droplets but never super cooled water droplets.

197- Which of the following cloud types is found at high levels?

- A) SC
- B) Ci
- C) AS
- D) CU

198- Clouds, classified as being low level are considered to have bases from:

- A) 500 to 1000 ft.
- B) 1000 to 2000 ft.
- C) the surface to 6500 ft.
- D) 100 to 200 ft.

199- Which of the following types of cloud can extend over the low, medium and high cloud levels?

- A) CB
- B) AC
- C) ST
- D) Ci

200- Which of the following clouds may extend into more than one layer?

- A) Stratus
- B) Nimbostratus
- C) Altocumulus
- D) Cirrus

201- Which of the following cloud is classified as low level cloud?

- A) ST
- B) CS
- C) AS
- D) CC

202- Which types of clouds are typical evidence of stable air conditions?

- A) ST, AS.
- B) CU, CB.
- C) NS, CU.
- D) CB, CC.

203- Convective clouds are formed:

- A) in stable atmosphere.
- B) in unstable atmosphere.
- C) in summer during the day only.
- D) in mid-latitudes only.

204- What is the main composition of clouds classified as high level clouds?

- A) Super cooled water droplets.
- B) Ice crystals.
- C) Water droplets.
- D) Water vapour.

205- What are the characteristics of cumuliform clouds?

- A) Large water droplets, stability, no turbulence, showers and mainly rime ice.
- B) Small water droplets, stability, no turbulence and extensive areas of rain.
- C) Large water droplets, instability, turbulence, showers and mainly clear ice.
- D) Small water droplets, instability, turbulence, extensive areas of rain and rime ice.

206- Cumuliform clouds are formed as a result of unstable air mass being lifted, most typically by convection. The flying conditions in cumuliform clouds typically include:

- A) icing in the clouds
- B) precipitation in the form of showers (large water droplets)
- C) turbulence inside the cloud and frequently also below the cloud base
- D) all of answers are correct

**207- In cumuliform clouds with extensive vertical development (TCU, CB) we can expect:
severe turbulence and icing:**

- A) electrical discharges (thunders storms)
- B) gusting surface winds
- C) up and down drafts in and around the cloud
- D) all of answers are correct

208- cumulus clouds are an indication for:

- A) stability.
- B) up and down draughts.
- C) the approach of a cold front.
- D) the approach of a warm front.

209- The presence of altocumulus castellanus indicates:

- A) stability in the higher troposphere.
- B) strong convection at low height.
- C) instability in the middle troposphere.
- D) subsidence in a large part of the troposphere.

210- Which of the following cloud types can project up into the stratosphere?

- A) Cumulonimbus
- B) Cirrostratus
- C) Altocumulus
- D) Altostratus

211- Lenticular clouds in mountainous areas indicate:

- A) unstable air.
- B) turbulence.
- C) an inversion.
- D) light variable winds.

212- The presence of lenticular cloud is an indication of:

- A) Jet streams.
- B) Mountain waves.
- C) Stratospheric inversions.
- D) Areas of high level clear air turbulence.

213- Stratiform clouds indicate stable air. Flight generally will be:

- A) rough with good visibility.
- B) smooth with low ceiling and visibility.
- C) smooth with good visibility.
- D) Smooth with moderate turbulence and good visibility

214- The family of medium clouds include altostratus, altocumulus and nimbostratus. In moderate latitudes their height of base ranges from:

- A) 3000 to 5000 feet.
- B) 2000 to 10 000 feet.
- C) 2000 to 12 000 feet.
- D) 6500 to 23 000 feet.

215- State the four families of clouds:

- A) high, medium and low clouds.
- B) high and medium clouds, and clouds with extensive vertical development.
- C) heap clouds, stratified clouds, layered clouds and nimbo clouds.
- D) high, medium and low clouds, and clouds with extensive vertical development.

216- Given a surface temperature of +10 °C, and a dew point of +5 °C, at what height might you expect cumulus clouds to form?

- A) 2000 ft.
- B) 4000 ft.
- C) 1000 ft.
- D) 3000 ft.

217- If a stable air mass is forced to rise, what type of cloud is most likely:

- A) CU
- B) NS
- C) TCU
- D) CB

218- What will be the classification of high level clouds and where will their bases be situated?

- A) Above 14 000 ft., Nimbus.
- B) Above 16500 ft., Cumuliform.
- C) Above 16 500 ft., Cirriform.
- D) Above 7 000 ft., Cumuliform.

219- What is the primary factor that determines the structure or type of clouds which will form as a result of air being forced to ascend?

- A) The stability of the air before lifting occurs.
- B) The method by which air is lifted.
- C) The relative humidity of the air after lifting occurs.
- D) The atmospheric pressure lapse rate.

220- What conditions can you generally expect with fair weather cumulus clouds?

- A) Turbulence at and below the cloud level.
- B) Smooth flight below the cloud level.
- C) Continuous rain.
- D) Turbulence in and above the clouds up to approximately FL250.

221- Which of the following are low level clouds? state the most complete answer:

- A) AS, AC.
- B) ST, CS.
- C) CI, ST.
- D) NS, CI.

222- Which of the following are high level cloud? State the most complete answer:

- A) AS, AC.
- B) ST, NS.
- C) CI, CC.
- D) NS, CI.

223- Flying conditions associated with cumulonimbus (CB) at summertime are:

- A) hazy weather combined with drizzle and turbulence.
- B) good visibility, intervals of fine weather and little turbulence.
- C) bad visibility, continuous rain and little turbulence.
- D) bad visibility in showers and pronounced turbulence.

224- The type of cloud formed when warming from below:

- A) stratus type.
- B) cumulus type.
- C) stratocumulus type.
- D) nimbostratus type.

225- Which of the following conditions is most likely to lead to the formation of advection fog?

- A) Moist cold air moving over a warm surface.
- B) Moist warm air moving over a cold surface.
- C) Dry warm air moving over a cold surface.
- D) Dry cold air moving over a warm surface.

226- Which of the following circumstances most favor the development of radiation fog?

- A) Warm moist air at the windward side of a mountain.
- B) Moist air over land during clear night with little wind.
- C) Maritime tropical air flowing over cold sea.
- D) Advection of very cold air over much warmer sea.

227- The range of wind speed in which radiation fog is most likely to form is:

- A) above 15 kts.
- B) between 10 and 15 kts.
- C) between 5 and 10 kts.
- D) below 5 kts.

228- Which of the following statements is true concerning advection fog?

- A) It forms slowly and disappears rapidly.
- B) It forms at night or the early morning.
- C) It forms when unstable air is cooled adiabatically.
- D) It can be formed suddenly by day or night.

229- The morning following a clear, calm night when the temperature has dropped to the dew point, is likely to produce:

- A) a cold front.
- B) radiation fog.
- C) advection fog.
- D) good clear weather.

230- When the temperature and dew point are less than one degree apart the weather conditions are most likely to be:

- A) unlimited visibility.
- B) clear and cool.
- C) high scattered clouds.
- D) fog or low cloud.

231- Which of the following is most likely to lead to the dissipation of radiation fog?

- A) A buildup of a high pressure area resulting in adiabatic warming associated with a sinking air mass.
- B) A marked decrease in wind velocity close to the ground.
- C) Ground cooling caused by radiation during the night.
- D) A marked increase in wind velocity near the ground.

232- Which type of fog is likely to form when air having temperature of 15°C and dew point of 12 °C blows at 10 knots over a sea surface having temperatures of 5°C?

- A) Radiation fog.
- B) Advection fog.
- C) Steam fog.
- D) Frontal fog.

233- Which of the following weather conditions favor the formation of radiation fog?

- A) Light wind, little or no cloud, moist air.
- B) Light wind, extensive cloud, dry air.
- C) Light wind, extensive cloud, moist air.
- D) Strong wind, little or no cloud, moist air.

234- Radiation fog can be dispersed by:

- A) insolation.
- B) strong winds.
- C) replacement of moist air by drier air.
- D) all of the above.

235- Radiation fog most frequently occurs in:

- A) low pressure systems over sea.
- B) high pressure systems over land.
- C) high pressure systems over sea.
- D) low pressure systems over land.

236- The formation of morning fog before sunrise is possible if:

- A) air temperature and dew point are equal or close to one another.
- B) the wind is strong.
- C) the sky is overcast.
- D) the turbulence in the lower layers is moderate.

237- Which type of fog cannot be formed over water?

- A) Advection fog.
- B) Radiation fog.
- C) Arctic smoke.
- D) Frontal fog.

238- The danger of experiencing fog is greatest when:

- A) dew point temperature is high.
- B) dew point temperature is low.
- C) there is little dew point spread.
- D) there is great dew point spread

239- What enhances the growth rate of precipitation?

- A) Adjective action.
- B) Upward currents.
- C) Cyclonic movement.
- D) Temperature inversions.

240- Fall streaks or virga are:

- A) water or ice particles falling out of a cloud that evaporate before reaching the ground.
- B) strong down draughts in the polar jet stream, associated with jet streaks.
- C) gusts associated with a well-developed Bora.
- D) strong katabatic winds in mountainous areas and accompanied by heavy precipitation.

241- Freezing precipitation occurs:

- A) only in the precipitate on of a warm front.
- B) only in the precipitation of a cold front.
- C) mainly in the form of freezing rain or freezing drizzle.
- D) mainly in the form of freezing hail or freezing snow.

242- The presence of ice pellets at the surface is evidence that:

- A) freezing rain occurs at a higher altitude.
- B) a cold front has passed.
- C) there are thunderstorms in the area.
- D) a warm front has passed.

243- What type of cloud can produce hail showers?

- A) CS
- B) NS
- C) CB
- D) AC

244- What type of clouds are associated with snow showers?

- A) Nimbostratus.
- B) Cumulus and altostratus.
- C) Altostratus and stratus.
- D) cumulonimbus.

245- Large hail stones:

- A) only occur in thunderstorms of mid-latitudes.
- B) are typically associated with severe thunderstorms
- C) are entirely composed of clear ice
- D) only occur in frontal thunderstorms.

246- Precipitation in the form of showers occurs mainly from:

- A) clouds containing only ice crystals.
- B) stratified clouds.
- C) cirro-type clouds.
- D) convective clouds.

247- What type of clouds are associated with rain showers?

- A) Nimbostratus.
- B) Towering cumulus and altostratus.
- C) Altostratus and stratus.
- D) Towering cumulus and cumulonimbus.

248- Which one of the following types of cloud is most likely to produce heavy precipitation?

- A) SC
- B) CS
- C) NS
- D) ST

249- Which of the following cloud types is least likely to produce precipitation?

- A) CI
- B) AS
- C) CB
- D) NS

250- In which of the following situations can freezing rain be encountered?

- A) Ahead of a warm front in the winter.
- B) Ahead of a cold front in the winter.
- C) Behind a warm front in the summer
- D) Ahead of a cold front in the summer.

251- Super cooled droplets can occur in:

- A) clouds, fog and precipitation.
- B) clouds but not in precipitation.
- C) precipitation but not in clouds
- D) clouds but not in fog.

252- Which of the following types of cloud is most likely to be associated with prolonged and continuous moderate rain?

- A) NS
- B) CU
- C) ST
- D) CI

253- What type of cloud is pertinent for showers?

- A) CB
- B) NS
- C) CI
- D) AS

254- An unstable air mass will normally be characterized by:

- A) stratiform cloud.
- B) cumuliform cloud and good visibility except in precipitation.
- C) continuous light rain from medium level layer cloud.
- D) poor visibility due to haze at the lower levels.

255- An air mass acquires its characteristics by:

- A) rising of the warm air above the underlying cold air.
- B) convection.
- C) stagnation of the air for a long period of time over areas having particular characteristics.
- D) air circulation around centers of permanent action.

256- What are the most common characteristics of a cold air mass moving over a warm surface?

- A) Cumuliform clouds, turbulence, and good visibility.
- B) Cumuliform clouds, turbulence, and poor visibility.
- C) Stratiform clouds, smooth air, and poor visibility.
- D) Stratiform clouds, turbulence, and good visibility.

257- What are the most common characteristics of a warm air mass, moving over a cold surface?

- A) Cumuliform clouds, turbulence, and good visibility.
- B) Cumuliform clouds, turbulence, and poor visibility.
- C) Stratiform clouds, smooth air, and poor visibility.
- D) Stratiform clouds, turbulence, and good visibility.

258- Turbulence that is encountered above 15000 ft., AGL not associated with cumuliform cloudiness, including thunderstorm should be reported as:

- A) Convective turbulence.
- B) Severe turbulence.
- C) Orographic turbulence.
- D) Clear air turbulence.

259- The first clouds are thin, wispy cirrus, followed by sheets of cirrus and cirrostratus, and altostratus. The sun is obscured as the altostratus thickens and drizzle or rain begins to fall. The cloud base is lowering as nimbostratus arrives. These phenomenon is due to

- A) warm front.
- B) cold front.
- C) trade wind front.
- D) sea-breeze front.

260- An occlusion takes place when:

- A) a cold front catches up with a warm front.
- B) warm air displaces cold air.
- C) cold air displaces warm air.
- D) the front no longer moves.

261- Subsidence is:

- A) vertically upwards motion of air.
- B) horizontal motion of air.
- C) vertically downwards motion of air.
- D) the same as convection.

262- Areas of sinking air are generally cloudless because as air sinks it:

- A) reaches warmer layers.
- B) is heated by compression.
- C) is heated by expansion.
- D) loses water vapor.

263- Define a "HIGH";

- A) an area with higher pressure than that of the horizontal environments.
- B) a high pressure ridge.
- C) an area of divergence.
- D) none of the above.

264- A trough of low pressure on a surface synoptic chart is an area of:

- A) divergence and subsidence.
- B) convergence and widespread ascent.
- C) divergence and widespread ascent.
- D) convergence and Subsidence.

265- Which statement is true regarding squall lines?

- A) They are always associated with cold front.
- B) They are non-frontal and often contains sever steady state thunderstorm.
- C) They form slowly but move rapidly.
- D) They are associated with frontal systems only.

266- A trough is a:

- A) type of a low pressure area.
- B) type of a high pressure area.
- C) tropical thunderstorm.
- D) tropical wind.

267- An area on a synoptic chart appearing as a "V-shaped" extension of a low pressure area is called a:

- A) ridge
- B) col
- C) trough
- D) occlusion

268- The downdrafts and rain starts and rain reach the ground when a thunderstorm cell is in ----- stage and the cell has reached a height 2500ft./min or more.

- A) mature
- B) Thermal
- C) Cumulus
- D) dissipating

269- A strong, dry and warm katabatic wind, produced by prior enforced ascent of air over hills or mountains is known as a:

- A) Bora
- B) Harmattan
- C) Mistral
- D) Foehn

270- A Foehn wind occurs on the:

- A) leeward side of a mountain range and is caused by the condensation level being lower on the leeward side than on the windward side.
- B) windward side of a mountain range and is caused by surface heating.
- C) windward side of a mountain range and is caused by surface cooling and reverse air flow.
- D) leeward side of a mountain range and is caused by significant moisture loss by precipitation from cloud.

271- Define the Chinook:

- A) warm and dry air descending at the leeward side of the Rocky Mountains.
- B) cold and dry air descending at the leeward side of the Appalachian Mountains.
- C) a dust and sand laden northeasterly wind in Northwest Africa.
- D) warm and dry air ascending on the West Side of the-Rocky Mountains.

272- Large super cooled water drops, which freeze on impact on an airplane, form:

- A) rime ice.
- B) clear ice.
- C) hoar frost.
- D) cloudy ice.

273- While descending through a cloud cover at high level, a small amount of a white and rough powder like contamination is detected along the leading edge of the wing. This contamination is called:

- A) clear ice.
- B) rime ice.
- C) mixed ice.
- D) frost.

274- In which of the following conditions is moderate to severe airframe icing most likely to be encountered?

- A) Within cloud of any type.
- B) Below the freezing level in clear air.
- C) In clear air above the freezing level.
- D) In nimbostratus cloud.

275- Clear ice is dangerous because it:

- A) spreads out and contains many air particles.
- B) is translucent and only forms at the leading edges.
- C) is not translucent and forms at the leading edges.
- D) is heavy and is difficult to remove from the aircraft surfaces.

276- The most dangerous form of airframe icing is:

- A) rime ice.
- B) hoar frost.
- C) dry ice.
- D) clear ice.

277- An instability line, which is narrow non-frontal line or band of convective activities with fully developed thunderstorm is:

- A) cold front thunderstorm.
- B) fast moving cold front thunderstorm.
- C) squall.
- D) air mass thunderstorm.

278- A thin coating of Hoar frost on the airfoil surface:

- A) does not affect takeoff performance.
- B) has significant negative effects on the lift. of the wing.
- C) affects the aspect ratio of the wing.
- D) only affects stability.

279- Which conditions result in the formation of hoar frost?

- A) The temperature of the collecting surface is at or below freezing and small droplets of moisture are falling.
- B) When dew forms and the temperature is below freezing.
- C) Temperature of the collecting surface is below the dew point of surrounding air and the dew point is colder than freezing.
- D) None of the above is correct.

280- Why is frost considered hazardous to flight?

- A) The increased weight requires a greater takeoff distance.
- B) Frost causes early airflow separation resulting in a loss of lift.
- C) Frost decreases control effectiveness.
- D) All of the above.

281- The possibility of significant icing at altitude, should be expected when on ground you observe:

- A) ice pellets.
- B) hail.
- C) snow.
- D) corn-snow.

282- How does moderate turbulence affect an aircraft?

- A) Large, abrupt changes in altitude or attitude occur but the aircraft may only be out of control momentarily.
- B) Rapid and somewhat rhythmic bumpiness is experienced without appreciable changes in altitude or attitude.
- C) Changes in altitude or attitude occur but the aircraft remains in positive control at all times.
- D) Continued flight in this environment will result in structural damage. With reference to ICAO scale of Intensity of turbulence.

283- The mechanical turbulence will increase when:

- A) flying from land to sea.
- B) temperature falls.
- C) pressure rises.
- D) the wind speed increases.

284- Hazardous wind shear is encountered near the ground:

- A) during periods when the wind velocity is stronger than 35 knots.
- B) during periods when the wind velocity is stronger than 35 knots and near mountain valleys.
- C) during periods of strong temperature inversion and near thunderstorms.
- D) near mountain valleys and on the windward side of hills and mountains.

285- What is a microburst?

- A) A small low pressure system where the wind circulates with very high speeds.
- B) A concentrated down draught with high speeds and a higher temperature than the surrounding air.
- C) An extremely strong wind gust in a tropical revolving storm.
- D) A concentrated downdraught with high speeds and a lower temperature than the surrounding air.

286- What are squall lines?

- A) Unusual intensive cold fronts.
- B) Bands of intensive thunderstorms.
- C) The surface weather associated with upper air troughs.
- D) The paths of tropical revolving storms.

287- During which stage of thunderstorm development are rotor winds characterized by roll clouds most likely to occur?

- A) Dissipating stage.
- B) Cumulus stage.
- C) Mature stage.
- D) Cumulus stage and mature stage.

288- In addition to a lifting action, what are two other conditions necessary for thunderstorm formation?

- A) Stable conditions and high moisture content.
- B) Unstable conditions and high moisture content.
- C) Stable conditions and low atmospheric pressure.
- D) Unstable conditions and low atmospheric pressure.

289- During the life cycle of a thunderstorm, which stage is characterized predominantly by downdraughts?

- A) Dissipating stage.
- B) Initial stage.
- C) Mature stage.
- D) Anvil stage.

290- Thunderstorms reach their greatest intensity during the:

- A) dissipating stage.
- B) the initial stage.
- C) mature stage.
- D) period in which precipitation is not falling.

291- A microburst:

- A) always occurs in thunderstorms.
- B) has a life time of more than 30 minutes.
- C) has a diameter of up to 4 km.
- D) occurs only in tropical areas.

292- Which thunderstorms generally produce the most severe conditions, such as heavy hail and destructive winds?

- A) Warm front thunderstorms.
- B) Squall line thunderstorms.
- C) Nocturnal air mass thunderstorms.
- D) Daytime air mass thunderstorms.

293- A thunderstorm has the following stages in its life cycle:

- A) initial, mature or building and declining.
- B) building, mature, declining and dissipating.
- C) initial, declining and dissipating.
- D) cumulus, mature and dissipating.

294- The initial stage of a thunderstorm last for approximately:

- A) 20 min.
- B) 30 min.
- C) 20 - 30 min.
- D) 40 min.

295- The mature stage of a thunderstorm lasts for approximately:

- A) 5 -15 min
- B) 30 - 60 min
- C) 20 - 30 min
- D) 45 min

296- Which of the following statements is true with regard to a mature thunderstorm?

- A) both up-currents and down-currents appear concurrently.
- B) the cloud top assumes an anvil shape.
- C) water droplets, hail and snow are all present.
- D) the top of the cloud is negatively charged and the base is positively charged.

297- The final stage of a thunderstorm is reached when:

- A) no further electrical charge is developed.
- B) the lower portion of the cloud dissipates.
- C) a well-developed anvil can be seen.
- D) all of the above.

298- What is a signal of the beginning of the mature stage of a thunderstorm?

- A) the appearance of an anvil top.
- B) growth rate of the CB cloud is maximum.
- C) the start of precipitation.
- D) CB cloud stops growing vertically

299- What is the location of a squall line?

- A) Ahead of a cold front
- B) Ahead of a warm front.
- C) Between cold and warm front.
- D) On the rear side of a frontal system.

300- Which type of clouds are associated with "Microburst"?

- A) Stratus (ST).
- B) Altocumulus (AC).
- C) Cumulonimbus (CB)_
- D) Cumulus (CU).

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	C	41	C	81	C	121	A
2	D	42	A	82	B	122	A
3	A	43	A	83	C	123	B
4	B	44	B	84	A	124	C
5	B	45	B	85	B	125	A
6	C	46	A	86	A	126	B
7	A	47	C	87	D	127	D
8	D	48	C	88	C	128	A
9	A	49	B	89	C	129	B
10	C	50	C	90	B	130	B
11	B	51	B	91	B	131	D
12	D	52	C	92	D	132	B
13	D	53	B	93	B	133	D
14	D	54	C	94	A	134	B
15	A	55	C	95	A	135	A
16	B	56	B	96	C	136	D
17	D	57	C	97	B	137	C
18	A	58	C	98	A	138	D
19	B	59	C	99	B	139	D
20	D	60	B	100	A	140	B
21	A	61	C	101	B	141	D
22	C	62	B	102	B	142	D
23	D	63	C	103	A	143	D
24	D	64	A	104	C	144	B
25	C	65	B	105	C	145	A
26	D	66	C	106	B	146	C
27	B	67	D	107	C	147	C
28	D	68	B	108	C	148	A
29	D	69	A	109	B	149	B
30	C	70	A	110	A	150	D
31	D	71	D	111	C	151	D
32	A	72	C	112	C	152	B
33	B	73	A	113	B	153	D
34	B	74	A	114	C	154	C
35	D	75	A	115	A	155	C
36	B	76	C	116	B	156	A
37	A	77	A	117	B	157	C
38	A	78	D	118	A	158	D
39	C	79	B	119	C	159	D
40	A	80	A	120	B	160	D

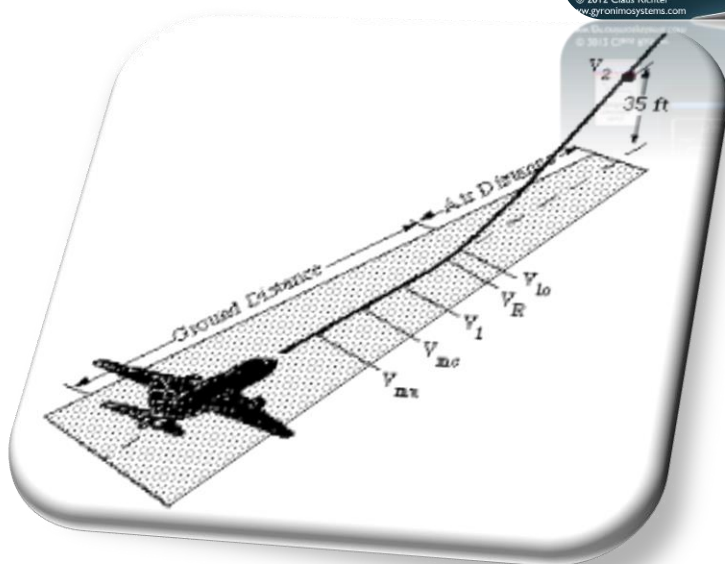
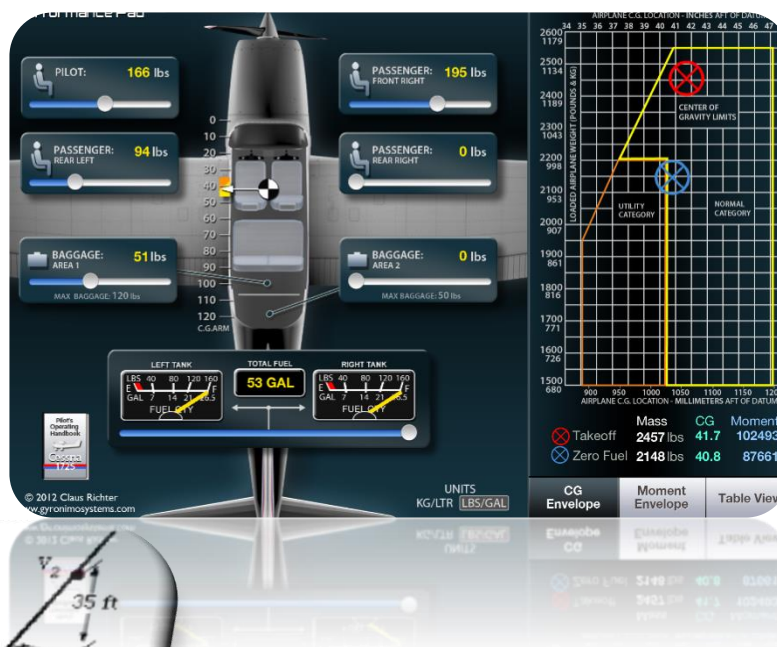
Question	Answer	Question	Answer	Question	Answer	Question	Answer
161	B	201	A	241	C	281	A
162	B	202	A	242	A	282	C
163	C	203	B	243	C	283	D
164	D	204	B	244	D	284	C
165	A	205	C	245	B	285	D
166	C	206	D	246	D	286	B
167	D	207	D	247	D	287	C
168	B	208	B	248	C	288	B
169	B	209	C	249	A	289	A
170	C	210	A	250	A	290	C
171	B	211	B	251	A	291	C
172	B	212	B	252	A	292	B
173	B	213	B	253	A	293	D
174	A	214	D	254	B	294	A
175	A	215	D	255	C	295	C
176	D	216	A	256	A	296	A
177	B	217	B	257	C	297	C
178	D	218	C	258	D	298	C
179	C	219	A	259	A	299	A
180	A	220	A	260	A	300	C
181	D	221	B	261	C		
182	A	222	C	262	B		
183	A	223	D	263	A		
184	A	224	B	264	B		
185	A	225	B	265	B		
186	B	226	B	266	A		
187	C	227	D	267	C		
188	D	228	D	268	A		
189	B	229	B	269	D		
190	A	230	D	270	D		
191	D	231	D	271	D		
192	A	232	B	272	B		
193	C	233	A	273	B		
194	C	234	D	274	D		
195	B	235	B	275	D		
196	B	236	A	276	D		
197	B	237	B	277	C		
198	C	238	C	278	B		
199	A	239	B	279	C		
200	B	240	A	280	D		

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

PERFORMANCE



1- What is the stalling speed at specific configuration?

- A) V_{SO}
- B) V_s
- C) V_{ST}
- D) V_{S1}

2- Which factor does not effect on V_{S1} ?

- A) Weight
- B) Configuration
- C) Altitude
- D) All answers are correct

3- The stalling speed at specific configuration increase by altitude increase?

- A) True
- B) False

4- Which factor affected on V_{S1} ?

- A) Weight
- B) Configuration
- C) Altitude
- D) A & B are correct

5- Uphill slope:

- A) Increases the takeoff distance.
- B) Decreases the accelerate stop distance available.
- C) Decreases the takeoff distance available.
- D) Increase the takeoff run available.

6- What is the max structure cruising speed during normal operating?

- A) V_{FE}
- B) V_{NO}
- C) V_{NE}
- D) V_{MO}

7- Density altitude increase when:

- A) Temperature decrease
- B) Pressure increase
- C) Temperature increase
- D) Altitude decrease

8- The primary reason for computing density altitude to determine A/C performance?

- A) True
- B) False

9- High performance of A/C will be obtained at:

- A) High density altitude
- B) High Temperature
- C) High weight
- D) A, B & C are incorrect

10- High density altitude cause

- A) Engine power out decrease
- B) Propeller efficiency decrease
- C) Aerodynamic lift. decrease
- D) All of answers are correct

11- In high humid air the engine performance decrease approximately as

- A) 10%
- B) 7 %
- C) 19%
- D) 21%

12- In high relative humidity condition, takeoff and climb performance reduce approximately as:

- A) 7%
- B) 10%
- C) 14%
- D) 19%

13- The most adverse effect on aircraft performance occur at

- A) High altitude, hot, humid
- B) High altitude, cold, humid
- C) Low altitude, hot, humid
- D) Low altitude, cold, humid

14- "Humidity has most effect on density altitude."

- A) True
- B) False

15- "Humidity "causes to

- A) Increase density altitude at lesser degree
- B) Decrease piston engine power output & propeller
- C) Decrease takeoff efficiency performance
- D) All answers are correct

16- If the head wind is ... of takeoff speed the takeoff distance will decrease by ...

- A) 19%-10%
- B) 10%-7%
- C) 10%-19%
- D) 14%-10%

17- If tail wind is take off speed the takeoff distance will increase by

- A) 10%-19%
- B) 14%-21%
- C) 7%-19%
- D) 10%-21%

18- What is the max cross wind of aircraft when the V_{SO} is 60 kts?

- A) 120 kts
- B) 15 kts
- C) 12 kts
- D) 14 kts

19- Which statement is not correct about effect of increase weight an aircraft performance?

- A) Increase service ceiling
- B) Increase Takeoff distance
- C) Decrease climb performance
- D) Decrease acceleration

20- Which of the following item has adversely effect on Takeoff performance but is beneficial for landing performance?

- A) Increase weight
- B) Positive runway gradient
- C) Negative runway gradient
- D) Humidity

21- Negative runway gradient is good for landing but is not preferable for takeoff?

- A) True
- B) False

22- The maximum amount of friction is on

- A) Wet Runway
- B) Slushy Runway
- C) Dry Runway
- D) Grass Runway

23- "Hydroplaning "is caused by

- A) Thin layer of water that decrease braking action
- B) Thin layer of snow that increase braking action
- C) Thin layer of snow that separate the tires from Runway.
- D) Thin layer of water that separate the tires from Runway.

24- "Hydroplaning "is defined as:

- A) Standing water about one-tenth of one inch or more.
- B) Standing water or slush about one-thousands inch.
- C) a thin film of water, more than one-thousands inch.
- D) a thin film of water, not more than one- tenth of an inch.

25- A higher temperature causes __ in air density and __ in lift.

- A) Increase; decrease
- B) Decrease; increase
- C) Increase; increase
- D) Decrease; decrease

26- How does an increase in aircraft mass affect the gliding range?

- A) Has no effect on gliding range.
- B) Decreases gliding range.
- C) Increases gliding range.

27- Which runway has a minimum amount of braking action?

- A) Dry
- B) Grass
- C) Wet
- D) All answers are correct

28- One which Runway braking action completely lost?

- A) Dry
- B) Slushy
- C) Wet
- D) Ice

29- On which runway , aircraft roll-out increase:

- A) Ice
- B) Slushy
- C) Wet
- D) All answers are correct

30- The max level speed defined as:

- A) Max power generates by engine and total drag generate by airplane
- B) Max thrust generates by engine and total drag generate by airplane
- C) Max thrust available divided to max thrust required.
- D) Max thrust required divided to max thrust available.

31-Which statement is correct?

- A) V_x is best angle of climb speed
- B) V_x increase by altitude increase for piston engine aircraft
- C) V_x increase engine temperature
- D) All answers are correct.

32-Which statement is correct?

- A) V_x use for climb and obstacle clearance
- B) V_x is best angle of climb speed
- C) V_y decrease by altitude increase for piston engine aircraft
- D) All answers are correct

33-Which statement is correct?

- A) V_x is difference between thrust horse power and thrust required.
- B) V_y is difference between thrust horse power available and thrust horse power required.
- C) Max altitude gains in short distance when climb by V_x
- D) All answers are correct.

34-Which statement is correct about V_x ?

- A) Max altitude gains at short distance
- B) Increase by altitude increase for piston engine aircraft.
- C) Best angle of climb speed
- D) A, B, C are correct

35-Which statement is correct?

- A) Thrust required is constant by altitude increase.
- B) Max rate of climb in service ceiling is 100' /min for piston engine aircraft.
- C) Max rate of climb in absolute ceiling is zero.
- D) A, B & C are correct

36-Which statement is correct about absolute ceiling?

- A) The point that V_x is equal to V_y
- B) The rate of climb is zero
- C) The speed of aircraft in absolute ceiling is V_{ZRC}
- D) All answers are correct are correct

37-High temperature reduces gas turbine engine performance about.

- A) 7%
- B) 14%
- C) 20%
- D) A & B are correct

38-“Humidity “effects on:

- A) Reciprocating engine more than jet engine.
- B) Reciprocating engine but has no effect on jet engine.
- C) Jet engine but has no effect on jet engine
- D) Jet engine more than reciprocating engine.

39-Which symbol indicates minimum steady flight speed when airplane is still controllable?

- A) V_s
- B) V_{s1}
- C) V_{so}
- D) V_{sc}

40-At which speed the pilot can control the airplane when critical engine is in operative but other engine is in Take-Off power.

- A) V_s
- B) V_{MC}
- C) V_1
- D) V_{MV}

41-“ V_1 “is the speed defined as:

- A) Lift. off speed
- B) The safety speed
- C) Take off must be aborted when engine failure below V_1
- D) All answers are correct are correct

42-“ V_R “is the speed defined as:

- A) Rotation speed
- B) V_R may not be less than V_1
- C) Wake turbulence commence from V_R
- D) All answers are correct are correct

43-Which speed represents the takeoff safety speed?

- A) V_{MC}
- B) V_{LOF}
- C) V_{MU}
- D) V_2

44-At which speed the aircraft first becomes airborne?

- A) V_{MC}
- B) V_{LOF}
- C) V_{MU}
- D) V_2

45-“ V_2 ” is the speed that define as:

- A) Must be attained before reaching a height of 35' AGL with all engine operative.
- B) Takeoff decision speed.
- C) Meet the requirement of climb gradient to 3000'.
- D) In some case would be less than V_{2min} .

46-What is the consequence of increasing atmospheric pressure on takeoff performance?

- A) A reduced takeoff distance and improved initial climb performance.
- B) An increased takeoff distance and degraded initial climb performance.
- C) An increased takeoff distance and improved initial climb performance.
- D) A reduced takeoff distance and degraded initial climb performance.

47-The effect of a decrease in air density is to:

- A) Increase the takeoff distance and reduce the rate of climb.
- B) Decrease the takeoff distance and reduce the rate of climb.
- C) Decrease the takeoff distance and increase the rate of climb.
- D) Increase the takeoff distance and increase the rate of climb.

48-What is the stalling speed with the landing configuration?

- A) V_{S1}
- B) V_S
- C) V_{SO}
- D) V_{st}

49-Which one is correct?

- A) $V_1 < V_R < V_{MU} < V_{2min} < V_2$
- B) $V_1 < V_R < V_{MU} < V_{LOF} < V_{2min} < V_2$
- C) $V_1 < V_{MU} < V_R < V_{LOF} < V_{2min} < V_2$
- D) $V_1 < V_R < V_{MU} < V_{2min} < V_{LOF} < V_2$

50-Which one is correct?

- A) V_{LOF} is a speed that aircraft first become airborne.
- B) The Takeoff must be aborted if engine failure occurs at a speed above V_1 but below V_2 .
- C) V_{2min} is a speed that airplane can safely lift off on the ground.
- D) All answers are correct.

51-“ASDA” is defined as:

- A) The length of runway plus stop way.
- B) Assuming the critical engine to fail at V_1 .
- C) ASDA use for takeoff and landing.
- D) All answers are correct.

52-The balance failed length is area define as:

- A) $ASDA > TODA$
- B) $TODA > ASDA$
- C) $ASDA = TODA$
- D) Depend to Runway length

53-Which is correct about clearway?

- A) Min width is 500'
- B) Max climb gradient in clearway 1.25%
- C) Max length of clearway is one-half of the runway
- D) All answers are correct.

54-“Clearway “is the area defined as:

- A) Is area on the ground
- B) Clearway is suitable for stop after aborted Takeoff.
- C) Is area extending into the air from the end of runway
- D) A & C are correct.

55-“Clearway “is the area defined as:

- A) Clearway use for aborted takeoff.
- B) Provide additional takeoff distance for climb
- C) Clearway use for computing ASDA
- D) Clearway does not provide extra distance after lift. off.

56-“Stopway “is the area defined as:

- A) Area beyond takeoff runway which use for aborted takeoff.
- B) Over run is another name of stopway.
- C) Use for takeoff computation only
- D) All answers are correct are correct.

57-“Takeoff distance required” is the distance from:

- A) Starting point up to 35' height AGL
- B) The point of break releases up to 50' AGL with engine failure
- C) Starting point up to 50' AGL with all engine operative.
- D) Starting point up to 35' height AGL with critical engine failure

58-Which statement is correct?

- A) Takeoff distance with critical engine failure is from starting point up to 50' AGL.
- B) Takeoff distance with all engine operative is 1.15 time of TODR with critical engine failure.
- C) Take off distance with all engine operative is lesser then distance with critical engine failure.
- D) All answers are correct.

59-“Takeoff Run required “is a distance

- A) From starting point up to mid-point of lift. off and 35' height AGL with critical engine failure at V1.
- B) From starting point up to lift. off point
- C) From starting point up to 50' height of AGL.
- D) None

60-Which statement is correct?

- A) Takeoff run is s distance from starting point up to midpoint between lift. off point and 35' height AGL for critical engine failure at V1.
- B) Takeoff run for all engine operative is 1.15 times of takeoff run with critical engine failure.
- C) Takeoff run for all engine operative is greater than takeoff run with critical engine failure.
- D) All answers are correct.

61-“Ground roll “is a distance from

- A) Starting point up to lift. off point.
- B) Starting point up to 35' height AGL.
- C) Starting point up to 50' height AGL.
- D) Starting point up to mid-point between lift. off point and 35' height AGL.

62-The maximum rate of climb that can be maintained at the absolute ceilings:

- A) 125 Ft./min.
- B) 0 Ft./min.
- C) 500 Ft./min.
- D) 100 Ft./min.

63-Which statement is correct for a descent without engine thrust at maximum lift. to drag ratio speed?

- A) Tailwind component decrease the ground distance
- B) Headwind component increase the ground distance
- C) Headwind component increase fuel and time to decent
- D) tailwind component increases the ground distance.

64-The greatest glide time obtain at

- A) Lower mass.
- B) headwind.
- C) tailwind.
- D) Higher mass.

65-Density altitude is the:

- A) Pressure altitude corrected for 'nonstandard' temperature.
- B) Altitude reference to the standard datum plane.
- C) Altitude read directly from the altimeter.
- D) Height above the surface.

66-“Landing distance”: is measure from

- A) 35' height above landing surface
- B) 50' height above landing surface
- C) 60' height above landing surface
- D) 70' height above landing surface

67-Which statement is correct?

- A) Landing distance is determined from 50' above landing surface until aircraft stop complete.
- B) Landing distance must not be greater than 60% of effective Runway.
- C) Landing distance must not be greater than 60% of effective Runway in alternate aerodrome.
- D) All answers are correct.

68-Which statement is correct?

- A) Climb gradient is the flight path achieved.
- B) Clearway begins at the end of stopway.
- C) Stop way use for both Takeoff & Landing computations.
- D) All answers are wrong.

69-What is the takeoff distance required when all engine are operating:

Distance between starting point and LOF point = 5000'

Distance between LOF point and 35' height = 1000'

- A) 6000'
- B) 6900'
- C) 5000'
- D) 6325'

70- Given:

Distance from starting point to LOF point = 5000'

Distance from LOF point up to midpoint between lift. off and 35' height (AGL) is 500'. Find takeoff distance required when critical engine is failed:

- A) 6000'
- B) 6900'
- C) 5000'
- D) 6325'

71- Find "Takeoff distance required "for aircraft with critical engine failure when:

Distance from starting point up to LOF point = 5000'

Distance from LOF point up to 35' height AGL = 1000'

- A) 6000'
- B) 6900'
- C) 5000'
- D) 6325'

72- Find "ASDA "when:

Runway length = 8000'

Clearway = 6000'

- A) 14000'
- B) 12000'
- C) 11000'
- D) 8000'

73- Find "TODA "When:

TORA= 8000'

Clearway = 6000'

Stopway = 3000'

- A) 14000'
- B) 12000'
- C) 11000'
- D) 8000'

74- Find "TODA" when:

Runway length = 7000'

Stopway = 3000'

Clearway = 2000'

- A) 7000'
- B) 10000'
- C) 9000'
- D) 8500'

75- What is the length of displace threshold?

Runway length = 9000'

Stop way = 800'

Clear way = 3000'

- A) 9000'
- B) 8200'
- C) 6000'
- D) zero

76- What is the length of displace threshold?

Runway length = 10000'

Landing distance available = 9500'

Stopway = 400'

- A) 400'
- B) 500'
- C) 1000'
- D) 10000'

77- What is the landing distance from 50' above surface when?

Landing runway length = 10000'

Stop way = 1000'

- A) 10000'
- B) 11000'
- C) 6000'
- D) 10600'

78- What is the Landing distance at destination alternate Aerodrome?

Destination alternate runway length = 10000'

Destination A/D runway length = 8000'

Stop way = 4000'

- A) 4800'
- B) 6000'
- C) 8400'
- D) 7200'

79-The first segment of climb is

- A) Actual lift. off to landing gear retraction.
- B) Actual lift. off to gear & flaps up.
- C) V1 point up to gear retraction.
- D) V1 point up to gear & flaps retraction.

80-The second segment of climb is from

- A) Gear & flaps retract up to 400' above AGL
- B) Gear retract up to 400' above AGL
- C) Gear & flaps retract up to 1500' above AGL
- D) Gear retract up to 1500' above AGL

81-The third segment of climb is from

- A) 400' AGL up to 1000' AGL
- B) Flap retraction up to 1500' AGL
- C) 400' AGL up to 1500' AGL
- D) Gear retraction up to 1000' AGL

82-Which take off limitation for a turbine engine air carrier airplane must not exceed 11,100 feet when (1) run way length is 8,600 feet (2) stopway is 2,500 feet and (3) the clearway is 4,200 feet?

- A) Take off path
- B) Take off distance
- C) Accelerate stop distance
- D) Take off run

83-What is the maximum accelerate stop distance for a turbo-prop powered air carrier airplane?

Run way length	8,800 feet
Clear way length	4,450 feet
Stop way length	2,700 feet

- A) 13,250 feet
- B) 11,500 feet
- C) 10,225 feet
- D) 8,300 feet

84-Defines V_{SO} , as the stalling speed or the minimum steady flight speed.

- A) In the landing configuration
- B) In the takeoff configuration
- C) With the critical engine operative
- D) At which the airplane is controllable

85-Which is a definition of V_2 ?

- A) Speed for the best rate of climb
- B) Take off decision speed
- C) Take off safety speed
- D) Minimum take off speed

86- What approximate speed should you expect dynamic hydroplaning to occur if a tire has an air pressure of 95 PSI?

- A) 84 knots
- B) 87 knots
- C) 90 knots
- D) 93 knots

87- What approximate speed should you expect dynamic hydroplaning to occur if a tire has an air pressure of 115 PSI?

- A) 89 knots
- B) 92 knots
- C) 95 knots
- D) 98 knots

88- At approximately what speed should you expect dynamic hydroplaning to occur if a tire has an air pressure of 105 PSI?

- A) 82 knots
- B) 85 knots
- C) 88 knots
- D) 92 knots

89- At approximately what speed should you expect dynamic hydroplaning to occur if a tire has an air pressure of 180 PSI?

- A) 95 knots
- B) 98 knots
- C) 115 knots
- D) 104 knots

90- Which is the correct symbol for the stalling speed or minimum steady flight speed in a specified configuration?

- A) V_{2min}
- B) V_{10}
- C) V_s
- D) V_{s0}

91- Which is the correct symbol for the stalling speed or the minimum steady flight speed at which the airplane is controllable?

- A) V_{s0}
- B) V_2
- C) V_s
- D) V_{s1}

92- What is the stall speed of an airplane under a load factor of 2 G's if the uncelebrated stall speed is 60 knots?

- A) 66 knots
- B) 74 knots
- C) 84 knots
- D) 102 knots

93- If necessary to take off from a slushy runway, the freezing of landing gear mechanisms can be minimized by:

- A) Recycling the gear.
- B) Delaying gear retraction.
- C) Increasing the airspeed to VLE before retraction.
- D) Frequently use of brakes.

94- For a piston-engine airplane at a constant altitude, angle of attack and configuration, an increased weight will require:

- A) More power but less speed.
- B) More power and the same speed.
- C) More power and more speed.
- D) The same power but more speed.

95- Which is the correct symbol for indicating absolute ceiling speed?

- A) V_{s1}
- B) V_s
- C) V_{ZRC}
- D) V_2

96- Which is the correct symbol for best endurance speed?

- A) V_{BE}
- B) V_s
- C) V_{BR}
- D) V_{2min}

97- Which is the correct symbol for best range speed?

- A) V_{MA}
- B) V_{MO}
- C) V_{BE}
- D) V_{BR}

98- What is the maximum takeoff run for a turbine engine transport category aircraft on the run way?

Run way length 8,800 feet

Clear way length 3,000 feet

Stop way length 1,000 feet

- A) 8,800 feet
- B) 9,000 feet
- C) 9,500 feet
- D) 11,000 feet

99- Which computation must not exceed the length of a runway plus the length of the stopway for a turbine engine powered transport category airplane?

- A) Take off run
- B) Accelerate stop distance
- C) Take off distance
- D) Take off path

100- What is the maximum takeoff run for a turbine powered domestic air carrier airplane?

Available run way length 6,500 Ft.

Length of clear way 3,500 Ft.

Length of stop way 1,500 Ft.

- A) 10,000 feet
- B) 9,750 feet
- C) 3,000 feet
- D) 6,500 feet

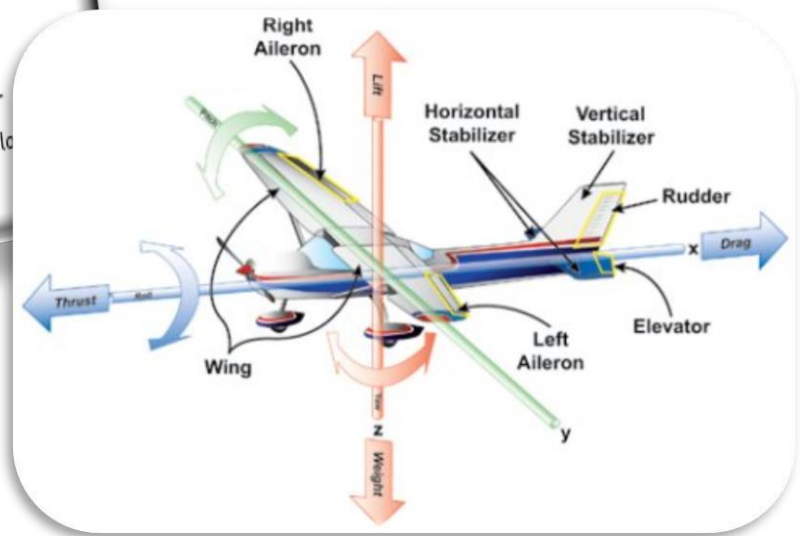
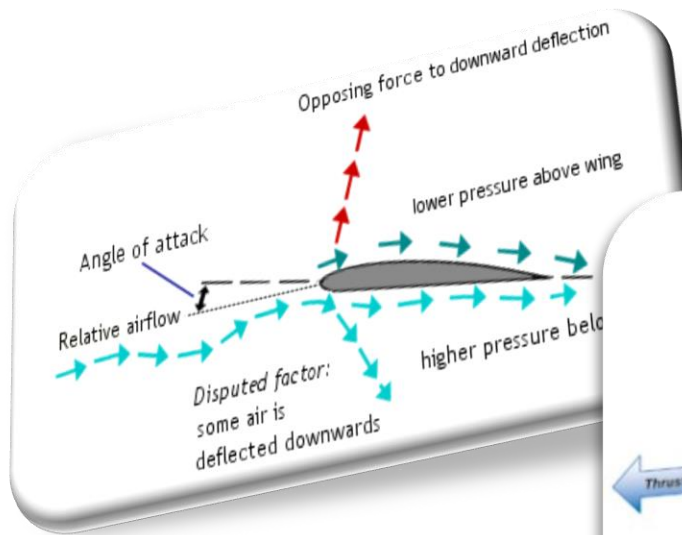
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	D	26	A	51	A	76	B
2	C	27	C	52	C	77	C
3	B	28	D	53	D	78	B
4	D	29	D	54	C	79	A
5	A	30	B	55	B	80	B
6	B	31	D	56	D	81	C
7	C	32	D	57	D	82	C
8	A	33	C	58	B	83	B
9	D	34	D	59	A	84	A
10	D	35	D	60	D	85	C
11	B	36	D	61	A	86	A
12	B	37	C	62	B	87	B
13	A	38	B	63	D	88	C
14	B	39	A	64	A	89	C
15	D	40	B	65	A	90	B
16	C	41	C	66	B	91	C
17	D	42	D	67	D	92	C
18	C	43	D	68	D	93	A
19	A	44	B	69	B	94	C
20	B	45	A	70	A	95	C
21	B	46	A	71	A	96	A
22	C	47	A	72	D	97	D
23	D	48	C	73	B	98	A
24	A	49	B	74	C	99	B
25	D	50	A	75	D	100	D

Flight Operation Officer Note

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Flight Operation Officer Note

PRINCIPLES OF FLIGHT



- 1- When considering the forces acting upon an airplane in straight & level flight at constant airspeed, which statement is correct?**
- A) Weight always acts vertically toward the center of the earth.
 - B) Lift. always acts perpendicular to the longitudinal axis of the wing.
 - C) Thrust always acts forward parallel to the relative wind and is greater than drag.
 - D) Drag always acts rearward parallel to the relative wind and is less than thrust.
- 2- An airplane in a steep-banked turn stalls at a higher airspeed than the wings level, because during turn the:**
- A) Critical angle of attack has decreased.
 - B) Critical angle of attack is reached at a higher airspeed.
 - C) Total lift. has decreased.
 - D) Effective thrust has decreased.
- 3- An accumulation of frost on the airplane wings will result in:**
- A) An increase in lift. and drag.
 - B) A decrease in lift. and increase in drag.
 - C) An increase in lift. and a decrease drag.
 - D) A decrease in lift. and drag.
- 4- With constant angle of attack, what is the ratio between airspeed and lift. if the airspeed is doubled?**
- A) Two times greater.
 - B) Three times greater.
 - C) Four times greater.
 - D) Will be the same.
- 5- Lift. on a wing is most properly defined as the :**
- A) Differential pressure acting perpendicular to the chord of the wing.
 - B) Force produced perpendicular to the relative wind.
 - C) Reduced pressure resulting from a smooth flow of air over a curved surface and acting perpendicular to the mean surface.
 - D) Partial vacuum produced on top of the wing.
- 6- Which of the following are considered primary flight control?**
- A) Outboard ailerons
 - B) Tabs
 - C) Empennage
 - D) Flaps

- 7- While maintaining a constant angle of bank and altitude in a coordinated turn, an increase in airspeed will:**
- A) Decreases the rate of turn resulting in a decreased load factor.
 - B) Decrease the rate of turn resulting in no change in load factor.
 - C) Increase the rate of turn resulting in an increased load factor.
 - D) Increases the rate of turn resulting in a decreased load factor.
- 8- If an airplane weight is 3,500 lbs and subjects to a total load of 10,500 lbs in flight, what would be the load factor?**
- A) +3 Gs.
 - B) +2 Gs.
 - C) +1 Gs.
 - D) +4 Gs.
- 9- Lift. is the force acting perpendicular to the:**
- A) Chord line
 - B) Relative wind
 - C) Upper surface of the wing
 - D) Lower surface of the wing
- 10- Drag is created:**
- A) As the airplane starts to move.
 - B) When the airplane flies.
 - C) When the engine runs.
 - D) When the airplane moves fast.
- 11- Lift. equals weight and thrust equals drag during:**
- A) Straight and level flight.
 - B) Un-accelerated flight.
 - C) Straight and level, un-accelerated flight.
 - D) Normal flight.
- 12- While moving through the air an airfoil generates lift. because of:**
- A) More air pressure below the airfoil.
 - B) Less air pressure above the airfoil.
 - C) Airflow velocity increases on lower surface of wing.
 - D) A & B.
- 13- Leading edge of an airfoil is:**
- A) In the middle part of the chord.
 - B) Somewhere close to the CG of the airplane.
 - C) The point which meets the air first.
 - D) All of the above.

- 14- Chord line is:**
- A) A line, which exists in some wings.
 - B) A line drawn from one wing tip to other.
 - C) An imaginary straight line drawn between the leading edge and the trailing edge.
 - D) Any line joining the leading edge and the trailing edge.
- 15- The air striking the lower surface of a wing produces:**
- A) The major portion of the total lift. of the wing.
 - B) The minor percentage of the total lift. of the wing.
 - C) All lift.
- 16- Angle of attack is the:**
- A) Same as angle of incidence.
 - B) Angle between the relative wind and the wing.
 - C) Angle between relative wind and the chord line.
- 17- Which of the following is true regarding the relative wind:**
- A) It is the wind caused by movement of air masses.
 - B) It is created by propeller.
 - C) It is the airflow created as a result of the motion of airfoil through the air.
 - D) It is the air, which flows horizontally and in backward direction.
- 18- The main design considerations of a wing are:**
- A) Plan form, span, camber and aspect ratio.
 - B) Aspect ratio, angle of attack, camber and chord line.
 - C) Aspect ratio, wing area, plan form and camber.
 - D) Plan form, aspect ratio, wing area and angle of attack.
- 19- Aspect ratio is:**
- A) Wing span divided by the average chord.
 - B) The relationship between the length and the width of a wing.
 - C) A factor to determine lift./drag characteristics.
 - D) All answers are correct.
- 20- The higher aspect ratio, the:**
- A) Lesser lift.
 - B) More drag.
 - C) Lesser drag.
 - D) Smaller the angle of attack.

21- Angle of incidence is:

- A) The same as angle of attack.
- B) The angle formed between the chord line of the wing and the longitudinal axis of the airplane.
- C) The angle formed between the wing chord line and the lateral axis of the airplane.

22- As the angle of attack increases, lift. and drag:

- A) Decreases.
- B) Increases.
- C) Remain the same.
- D) None of above.

23- When you change the angle of attack, at the same time you are changing the:

- A) Lift.
- B) Drag.
- C) Coefficient of lift.
- D) All answers are correct.

24- Which of the following is true regarding the boundary layer:

- A) It is airflow near the airplane control surfaces.
- B) It is the airflow under the wing.
- C) It is the same as relative wind.
- D) It is a flow of air adjacent to the wing surface contributing in the production of lift..

25- The only way for recovering from the stall is:

- A) Lowering the angle of attack.
- B) Increasing the lift.
- C) Decreasing the drag.

26- For a certain amount of lift. to be created:

- A) There are only one certain airspeed and one certain angle of attack.
- B) There are different combination of airspeed and angle of attack.
- C) There is one certain airspeed.
- D) There is one certain angle of attack.

27- Which of the following is correct?

- A) A wing always stalls at the same angle of attack.
- B) A wing may stall in different attitudes.
- C) A wing can stall at different airspeeds.
- D) All answers are correct.

- 28- You will stall your airplane if you:**
- A) Pulls the stick back.
 - B) Decrease the airspeed.
 - C) Pull the stick back to exceed the critical angle of attack.
 - D) All of the above.
- 29- Stall may occur:**
- A) Only in level flight attitude.
 - B) Only in climb attitude.
 - C) Only in descent attitude.
 - D) In any attitude.
- 30- The airspeed resulting in the least amount of drag will:**
- A) The maximum L/D ratio.
 - B) The best glide angle.
 - C) The longest gliding distance in propeller-driven aircraft.
 - D) All of the above.
- 31- Drag is broadly divided into two types:**
- A) Form drag and skin friction.
 - B) Parasite drag and form drag.
 - C) Induced drag and parasite drag.
- 32- Total drag means:**
- A) Interference drag, form drag and skin friction.
 - B) Induced drag, form drag, parasite drag and skin friction.
 - C) Induced drag, form drag, interference drag and skin friction.
 - D) Parasite drag, form drag and skin friction.
- 33- Which of the following is correct?**
- A) Form drag is the same as parasite drag.
 - B) Skin friction is the same as parasite drag.
 - C) Induced drag is the part of parasite drag.
 - D) None of above.
- 34- Total drag is minimum when:**
- A) Lift. is maximum.
 - B) Speed is maximum.
 - C) Coefficient of lift. is maximum.
 - D) L/D is maximum.

- 35- As the airspeed increases above minimum drag speed:**
- A) Induced drag increases but parasite drag decreases.
 - B) Parasite drag increases but induced drag decreases.
 - C) All types of drag decrease.
 - D) All types of drag increase.
- 36- During acceleration:**
- A) Drag exceeds thrust.
 - B) Thrust equals drag.
 - C) Thrust exceeds drag.
 - D) Lift. exceeds weight.
- 37- The more camber:**
- A) The more lift.
 - B) The more drag.
 - C) A & B are correct.
 - D) More lift. & less drag.
- 38- In a coordinated turn the displacement of the turn needle:**
- A) Increases as angle of bank increases and airspeed decreases.
 - B) Indicate the angle of bank.
 - C) Remain constant for a 30 degrees bank regardless of airspeed.
 - D) Increase as angle of bank increases and airspeed increase.
- 39- If two aircraft are turning at the same angle of bank the slower aircraft:**
- A) Has a greater turning radius and greater rate of turn.
 - B) Has a smaller turning radius and smaller rate of turn.
 - C) Has a smaller turning radius and greater rate of turn.
 - D) Has a greater turning radius and smaller rate of turn.
- 40- In a coordinated-level turn at constant angle of bank, what would happen if you increase airspeed?**
- A) The angle of attack will be increase with increasing load factor.
 - B) The rate of turn will decrease with no change in load factor.
 - C) The rate of turn will increase with decrease in load factor.
 - D) The angle of bank will be decrease with decrease in load factor.
- 41- The reason of a light general aviation airplane tends to nose down during power reductions is the:**
- A) Force of drag acts horizontally and above thrust line.
 - B) Center of pressure is located forward of center of gravity.
 - C) Center of gravity is located forward of center of pressure.

- 42- The point on an airfoil through which lift acts is the :**
- A) Midpoint of the chord.
 - B) Center of pressure.
 - C) Center of rotation.
 - D) Center of gravity.
- 43- Lowering the flap during a landing:**
- A) Permit to landing with a higher indicated speed.
 - B) Eliminate floating.
 - C) Decrease the angle of descent without increasing power.
 - D) Increase the angle of descent without increasing airspeed.
- 44- The force of lift is considered to act through one point in the airfoil section of a wing, this point is called:**
- A) Center of rotation.
 - B) Midpoint of the chord.
 - C) Center of pressure.
 - D) Center of gravity.
- 45- The primary purpose of using flaps is to:**
- A) Takes the airplane off the ground.
 - B) Land the airplane.
 - C) Decrease the airspeed.
 - D) Create more lift at slower airspeed.
- 46- The most efficient type of flap is the:**
- A) Fowler flap.
 - B) Slotted flap.
 - C) Split flap.
 - D) Plain flap.
- 47- Which of the following is true?**
- A) Fowler flap is less efficient than slotted flap.
 - B) Split flap is more efficient than fowler flap.
 - C) Split flap is more efficient than slotted flap.
 - D) Plain flap is less efficient than fowler flap.
- 48- Using flaps:**
- A) Shortens the landing roll.
 - B) Steepen the approach angle.
 - C) Permit a lower airspeed in landing phase.
 - D) All answers are correct.

49- What is dynamic longitudinal stability?

- A) Motion around longitudinal axis.
- B) Motion around lateral axis.
- C) Motion around vertical axis.
- D) All answers are correct.

50- The angle of attack at which an airplane wing stalls will:

- A) Change with an increase in gross weight.
- B) Remain the same regardless of gross weight.
- C) Decrease if the center of gravity is moved aft.
- D) Increase if the center of gravity is moved forward.

51- The acute angle between the chord of an airfoil (wing) and its direction of motion relative to the air is known as the:

- A) Dihedral angle.
- B) Stalling angle.
- C) Angle of attack.
- D) Angle of incidence.

52- Which statement is true regarding airplane weight and maximum distance glide speed?

- A) Glide distance for an airplane is a fixed value and does not change.
- B) A change in airplane weight will not require a change in the maximum distance glides speed.
- C) A decrease in airplane weight would require an increase in the maximum distance glides speed.
- D) A decrease in airplane weight would require a decrease in maximum distance glide speed.

53- Aspect ratio of the wing is defined as the ratio of the:

- A) Wingspan to the wing root.
- B) Square of the chord to relative wind.
- C) Wingspan to the mean aerodynamic chord.
- D) Wing spar to the main compression rib.

54- All stalls in airplane are caused by:

- A) A loss of airspeed.
- B) Exceeding the critical angle of pitch.
- C) Exceeding the critical angle of attack.
- D) Misuse of the elevators.

- 55- An asymmetrical airfoil with zero angle of attack, creates a pressure below the wing that generally would be:**
- A) Less than atmospheric pressure.
 - B) Equal to atmospheric pressure.
 - C) Greater than atmospheric pressure.
 - D) Less than the pressure along the upper surface of the wing.
- 56- What is the relationship between true airspeed and angle of attack for generating the same amount of lift? as altitude is increased?**
- A) The same true airspeed and angle of attack.
 - B) A higher true airspeed for any given angle of attack.
 - C) The lower true airspeed and higher angle of attack.
 - D) The lower true airspeed and lower angle of attack.
- 57- What should the pilot do to increase rate of turn and at the same time decrease the radius of turn?**
- A) Shallow the bank and decrease airspeed.
 - B) Shallow the bank and increase airspeed.
 - C) Steepen the bank and increase airspeed.
 - D) Steepen the bank and decrease airspeed.
- 58- Which changes in airplane control must be made to maintain altitude while the airspeed decreases?**
- A) Increase the angle of attack to compensate for decreasing lift.
 - B) Maintain a constant angle of attack until the desired airspeed is reached, then Increase the angle of attack.
 - C) Increase the angle of attack to produce more lift. than weight.
 - D) Decrease the angle of attack to compensate for decreasing drag.
- 59- What procedure should be followed for vortex avoidance when landing behind a large airplane?**
- A) Stay to one side of its final approach flight path and land near the edge of the runway.
 - B) Stay above its final approach flight path all the way to touch down.
 - C) Stay well below its final approach flight path and land at least 2000 ft. behind.
 - D) Stay below and to one side of its final approach flight path.

- 60- Adverse yaw during a turn entry is caused by:**
- A) Increased induced drag on the lowered wing and decreased induced drag on the raised wing.
 - B) Decreased induced drag on the lowered wing and increased induced drag on the raised wing.
 - C) Increased parasite drag on the raised wing and decreased parasite drags on the lowered wing.
- 61- The force, which imparts a change in the velocity of a mass, is called:**
- A) Work.
 - B) Power.
 - C) Thrust.
- 62- An airplane would have a tendency to nose up and have inherent tendency to enter a stalled condition when the center of pressure is:**
- A) Below the center of gravity.
 - B) Aft of the center of gravity.
 - C) Forward of the center of gravity.
- 63- Which statement relates to Bernoulli's principle?**
- A) For every action there is an equal and opposite reaction.
 - B) An additional upward force is generated as the lower surface of the wing deflects air downward.
 - C) Air traveling faster over the curved upper surface of an airfoil causes lower pressure on the top surface.
- 64- That portion of the aircraft's total drag, created by the production of lift, is called:**
- A) Induced drag, and is not altered by the changes in airspeed.
 - B) Induced drag, and are greatly altered by the changes in airspeed.
 - C) Parasite drag, and is greatly altered by the changes in airspeed.
- 65- The resistance or skin friction, due to the viscosity of the air as it passes along the surface of the wing is part of :**
- A) Form drag.
 - B) Induced drag.
 - C) Parasite drag.
- 66- Which relationship is correct when comparing drag and airspeed?**
- A) Induced drag increases as the square of the airspeed.
 - B) Induced drag varies inversely as the square of the airspeed.
 - C) Profile drag varies inversely as the square of the airspeed.

- 67- As the angle of bank is increased, the vertical component of lift.:**
- A) Increases and the sink rate increases.
 - B) Decreases and the sink rate increases.
 - C) Increases and the sink rate decreases.
- 68- What action is necessary to make an airplane turn?**
- A) Yaw the airplane.
 - B) Change the direction of lift.
 - C) Change the direction of thrust.
- 69- The critical angle of attack at which a given airplane's wing stalls is depend on the :**
- A) Gross weight.
 - B) Design of the wing.
 - C) Attitude and airspeed.
- 70- Which of the following is a result of ground effect?**
- A) An increase in lift. with no increase in angle of attack.
 - B) An increase in induced drag with no change in angle of attack.
 - C) An increase in the wing's downwash with no increase in angle of attack.
- 71- It is possible to fly an airplane just clear of the ground at a slightly slower airspeed than that required to sustain level flight at higher altitudes. This is the result of:**
- A) Interference of the ground surface with the airflow patterns about the airplane in flight.
 - B) A cushioning effect of the air as it is trapped between the grounds and the descending airplane.
 - C) Ground interference with the static pressure system, which produces false indications on the airspeed indicator.
- 72- An airplane is usually affected by ground effect at what height above the surface?**
- A) Three to four times the airplane's wingspan.
 - B) Twice the airplane's wingspan above the surface.
 - C) Less than the airplane's wingspan above the surface.
- 73- If an airplane's gross weight is 3,250 pounds, what is the load acting on this airplane during a level 60° banked turn?**
- A) 3,250 pounds.
 - B) 5,200 pounds.
 - C) 6,500 pounds.

- 74- An airplane has a normal stalling speed of 60 MPH but is forced into an accelerated stall at twice that speed. What maximum load factor will result from this maneuver?**
- A) 4 G's.
 - B) 2 G's.
 - C) 1 G's.
- 75- Which action will result in a stall?**
- A) Flying at too low an airspeed.
 - B) Raising the airplane's nose too high.
 - C) Exceeding the critical angle of attack.
- 76- The most desirable type of stability for an aircraft to possess is:**
- A) Neutral static stability.
 - B) Positive static stability.
 - C) Negative Static stability.
- 77- The characteristic of an airplane that permits it to maneuver easily and withstand the stresses imposed on it is:**
- A) Stability.
 - B) Maneuverability.
 - C) Controllability.
- 78- The capability of an airplane to respond to the pilot's inputs, especially with regard to flight path and attitude, is :**
- A) Stability
 - B) Controllability
 - C) Maneuverability
- 79- If an increase in power tends to make the nose of the aircraft rise, this is the result of the:**
- A) Line of thrust being below the center of gravity.
 - B) Center of lift. being ahead of the center of gravity.
 - C) Center of lift. and center of gravity being collocated.
- 80- On which wing plan form does the stall begin at the wingtip and progress inward and toward the wing root?**
- A) Sweepback wing.
 - B) Elliptical wing.
 - C) Moderate taper wing.

- 81- A rectangular wing, as compared to other wing plan form, has a tendency to stall first at the:**
- A) Wingtip providing adequate stall warning.
 - B) Wing root providing adequate stall warning.
 - C) Wingtip providing inadequate stall warning.
- 82- The purpose of aircraft wing dihedral angle is to:**
- A) Increase lateral stability.
 - B) Increase longitudinal stability.
 - C) Increase lift. coefficient of the wing.
- 83- Aspect ratio of a wing is defined as the ratio of the:**
- A) Wingspan to the wing root.
 - B) Wingspan to the mean chord.
 - C) Square of the chord to the wingspan.
- 84- A wing with a very high aspect ratio (in comparison with a low aspect ratio wing) will have**
- A) Lower stalling speed.
 - B) Increased drag at high angles of attack.
 - C) Poor control qualities at low airspeeds.
- 85- At a constant velocity in airflow, a high aspect ratio wing will have (in comparison with a low aspect ratio wing) :**
- A) Increased drag, especially at a low angle of attack.
 - B) Decreased drag, especially at a high angle of attack.
 - C) Increased drag, especially at a high angle of attack.
- 86- The four aerodynamic forces acting on an airplane are :**
- A) Power, velocity, gravity, and drag.
 - B) Power, velocity, weight, and friction.
 - C) Thrust, lift., gravity, and weight.
 - D) Thrust, lift., weight and drag.
- 87- When the four aerodynamic forces act on an airplane are in equilibrium?**
- A) When the aircraft is at rest on the ground.
 - B) When the aircraft is accelerating
 - C) While the aircraft is decelerating.
 - D) During steady un-accelerated flight.

- 88- What is the relationship between lift., drag, thrust, and weight when the airplane is in straight and level flight?**
- A) Lift. equals drag and thrust equals weight.
 - B) Lift., drag, and weight equal thrust.
 - C) Lift. and weight equal thrust and drag.
 - D) Lift. equals weight and thrust equals drag.
- 89- What makes an airplane turn?**
- A) Centrifugal force.
 - B) Rudder and aileron.
 - C) Horizontal component of lift.
- 90- The term angle of attack is defined as the:**
- A) Angle between the wing chord line and the direction of the relative wind.
 - B) Angle between the airplane's climb angle and the horizon.
 - C) Angle formed by the longitudinal axis of the airplane and the chord line of the wing.
 - D) Specific angle at which the ratio between lift. and drag is the highest.
- 91- The left. turning tendency of an airplane caused by P-factor is the result of the (propeller rotates clockwise as seen from cockpit):**
- A) Clockwise rotation of the engine and the propeller turning the airplane counterclockwise.
 - B) Propeller blade descending on the right, producing more thrust than the ascending blade on the left.
 - C) Gyroscopic forces applied to the rotating propeller blades acting 90 ° in advance of the point the force was applied.
 - D) Spiral characteristics of the slipstream air being forced rearward by the rotating propeller.
- 92- The purpose of the rudder on an airplane is to:**
- A) Controls the yaw.
 - B) Control the over banking tendency.
 - C) Maintain a crab angle to control drift.
 - D) Maintain the turn after the airplane is banked.
- 93- The purpose of wing flaps is to:**
- A) Enables the pilot to make steeper approaches for landing without increasing airspeed.
 - B) Relieve the pilot of maintaining continuous pressure on the controls.
 - C) Decrease wing area to vary the lift.
 - D) Inject low pressure air into the boundary layer.
- 94- The amount of excess load that can be imposed on the wing depends upon the :**
- A) Position of the CG.
 - B) Speed of the airplane.
 - C) Abruptness at which the load is applied.

- 95- During an approach to a stall, an increased load factor will cause the airplane to :**
- A) Stall at a higher airspeed.
 - B) Have a tendency to spin.
 - C) More difficult to control.
 - D) Have a tendency to yaw and roll as the stall is encountered.
- 96- Which basic flight maneuver increases the load factor on an airplane as compared to straight and level flight?**
- A) Climbs.
 - B) Turns.
 - C) Stalls.
 - D) Slips.
- 97- An airplane said to be inherently stable will:**
- A) Not spin.
 - B) Be difficult to stall.
 - C) Require less effort to control.
 - D) Not over bank during steep turns.
- 98- What determines the longitudinal stability of an airplane?**
- A) The location of the CG with respect to the center of lift.
 - B) The effectiveness of the horizontal stabilizer, rudder, and rudder trim tab.
 - C) The relationship of thrust and lift. to weight and drag.
 - D) The dihedral, angle of sweepback, and the keel effect.
- 99- An airplane has been loaded in such a manner that the CG is located behind the aft CG limit. One undesirable flight characteristic a pilot might experience with this airplane would be:**
- A) Longer take-off run.
 - B) The inability to recover from a stalled condition.
 - C) Stalling at higher than normal airspeed.
 - D) The inability to flare during landings.
- 100- Loading an airplane to the most aft CG will cause the airplane to be:**
- A) Less stable at slow speeds, but more stable at high speeds.
 - B) Less stable at high speeds, but more stable at low speeds.
 - C) More stable at all speeds.
 - D) Less stable at all speeds.

101- Frost on the wings of an airplane may :

- A) Cause the airplane to become airborne with a lower angle of attack and at a lower indicated airspeed.
- B) Make it difficult or impossible to become airborne.
- C) Present no problems since frost will blow off when the airplane starts moving during takeoff.
- D) Change the camber (curvature of the wing) thereby increasing lift. during takeoff.

102- P-factor causes the airplane (propeller rotates clockwise as seen from cockpit):

- A) The unstable around the lateral axis.
- B) Yaw to the left. when at high angles of attack.
- C) Yaw to the left. when at high speeds.
- D) Be unstable around the vertical and lateral axes.

103- Which condition results in greatest torque effect on single engine airplane?

- A) Low airspeed, high power setting.
- B) Low airspeed, low power setting.
- C) High airspeed, high power setting.
- D) High airspeed, low power setting.

104- As altitude increases, the indicated airspeed at which a given airplane stalls in a particular configuration will (piston-engine airplane):

- A) Decreases as the true airspeed decrease.
- B) Decrease as the true airspeed increases.
- C) Remain the same regardless of gross weight.
- D) Increase because the air density becomes less.

105- Ground effect is most likely to result in which problem?

- A) Settling to the surface abruptly during landing.
- B) Becoming airborne before reaching recommended takeoff speed.
- C) Inability to get airborne even though airspeed is sufficient for normal takeoff speeds.
- D) A rapid rate of sink and absence of normal cushioning during landings.

106- Which phenomenon must a pilot be aware of as a result of ground effect?

- A) The increase in wingtip vortices.
- B) It results in the least significant reduction of thrust available.
- C) Wing downwash on the tail surfaces increases.
- D) The induced angle of attack and induced drag decreases.

107- After takeoff, and after leaving ground effect, the pilot will need to:

- A) Decrease the angle of attack to maintain, the same lift. coefficient.
- B) Increase thrust due to an increase in induced drag.
- C) Increase pitch attitude due to a nose down change in moment.

108- Floating caused by the phenomenon of ground effect will be most realized during an approach to land when:

- A) At less than the length of the wingspan above the surface.
- B) At twice the length of the wingspan above the surface.
- C) Higher than normal angle of attack is used.
- D) At speeds approaching a stall.

109- Which of the following is considered as primary flight control?

- A) Elevator.
- B) Dorsal fin.
- C) Slats.

110- Which of the following is not considered as primary flight control?

- A) Rudder
- B) Elevator
- C) Trailing edge Flaps
- D) Ailerons

111- Wake turbulence is greatest from a large heavy aircraft, which is operating at:

- A) Low airspeed and low angle of attack.
- B) Low airspeed and high angle of attack.
- C) High airspeed and low angle of attack.
- D) High airspeed and high angle of attack.

112- What is a purpose of flight spoilers?

- A) Increase the camber of the wing.
- B) Reduce speed by increasing drag.
- C) Direct airflow over the top of the wing at high angles of attack.

113- For which purpose may flight spoilers be used?

- A) Increase the rate of descent without increasing aerodynamic drag.
- B) Aid in longitudinal balance when rolling an airplane into a turn.
- C) Reduce the wings lift. upon landing.
- D) B & C are correct.

114- Stall speed is affected by :

- A) Weight, load factor and power.
- B) Load factor, angle of attack and power.
- C) Angle of attack, weight and air density.

115- An airplane leaving ground effect will :

- A) Displays more stability and a nose change in moment.
- B) Experiences an increase in induced drag require more thrust.
- C) Requires a Lower angle of attack to maintain the same lift. coefficient.

116- What is the characteristic of flight at maximum L/D in a propeller-driven airplane?

- A) Best angle of climb.
- B) Maximum range and maximum glide distance.
- C) Maximum coefficient of lift. and minimum coefficient of drag.

117- If the airplane attitude remains in a new position after the elevator control is pressed forward and released the airplane displays:

- A) Neutral longitudinal static stability.
- B) Positive longitudinal static stability.
- C) Neutral longitudinal dynamic stability.

118- Load factor is the lift. generated by the wing of an airplane at any given time :

- A) Multiplied by the total weight of the airplane.
- B) Divided by the total weight of the airplane.
- C) Subtracted from the total weight of the airplane.
- D) Added to the empty weight of the airplane.

119- The design load factor for airplane in the normal category is:

- A) +4.4 G's.
- B) +5.4 G's.
- C) +3.8 G's.
- D) +6 G's.

120- If the airspeed of an airplane is doubled while in level flight, parasite drag will:

- A) Remains the same.
- B) Decreases as airspeed increases.
- C) Doubles.
- D) Be four times greater.

121- As airspeed increases in level flight above the maximum L/D speed, total drag of an airplane:

- A) Decreases due to decreased induced drag.
- B) Increases due to increased induced drag.
- C) Decreases due to decreased parasite drag.
- D) Increases due to increased parasite drag.

- 122- As airspeed decreases in level flight below the speed for maximum L/D, total drag of an airplane:**
- A) Increases because of increased induced drag.
 - B) Increases because of increased parasite drag.
 - C) Decreases because of lower induced drag.
 - D) Decreases because of lower parasite drag.
- 123- Which statement is true relative to changing angle of attack?**
- A) A decrease in angle of attack will increase impact pressure below the wing and decrease drag.
 - B) An increase in angle of attack will decrease impact pressure below the wing and increase drag.
 - C) An increase in angle of attack will increase impact pressure below the wing and increase drag.
 - D) An increase in angle of attack will increase impact pressure the wing and decrease drag.
- 124- For a given angle of bank, the load factor imposed on both the aircraft and pilot in a coordinated-level turn:**
- A) Varies with the rate of turn.
 - B) Is constant.
 - C) Is directly related to the airplane's gross weight.
- 125- How does VNE speed vary with altitude?**
- A) A Varies directly with altitude.
 - B) Varies inversely with altitude.
 - C) Remains the same at all altitudes.
- 126- What is the pilot action to avoid the wingtip vortices of a departing jet airplane during takeoff?**
- A) Climb above and stay upwind of the jet airplane's flight path.
 - B) Lift. off exactly at the jet airplane's flight path.
 - C) Remain below the flight of the jet airplane.
 - D) Lift. off at a point well past the jet airplane's flight path.
- 127- Wing tip vortices are created only, when the airplane is:**
- A) Generating lift.
 - B) Heavily loaded.
 - C) Operating at high airspeed.
 - D) Using high power setting.

- 128- If you should takeoff behind a heavy jet that has just landed you must plan to lift off:**
- A) Prior the point where the jet touched down.
 - B) It does not matter as far as you are upward.
 - C) Beyond the point where the jet touched down.
- 129- Which of the following are considered primary flight controls?**
- A) Tabs
 - B) Rudder
 - C) Flaps
 - D) Slats
- 130- The primary purpose of high-lift. devices is to increase the :**
- A) Drag and reduce airspeed.
 - B) Lift. at lower speeds.
 - C) L/D max.
- 131- During a constant-bank level turn, what effect would an increase in airspeed have on the rate and radius of turn?**
- A) Rate of turn would increase and the radius of turn would increase.
 - B) Rate of turn would decrease and the radius of turn would decrease.
 - C) Rate of turn would decrease and the radius of turn would increase.
- 132- When airspeed increases in a turn, what must be done to maintain level flight?**
- A) Decrease the angle of bank and or increase the angle of attack.
 - B) Increase the angle of bank and or decrease the angle of attack.
 - C) Increase the angle of attack.
- 133- Which force causes an airplane to turn?**
- A) Rudder pressure or force around the vertical axis.
 - B) Vertical component of lift.
 - C) Centripetal force.
 - D) Centrifugal force.
- 134- Which is the relationship between the centrifugal force and the horizontal component of lift. in a skidding turn?**
- A) Horizontal component of lift. exceeds the centrifugal force.
 - B) Horizontal component of lift. and the centrifugal force are equal.
 - C) Centrifugal force exceeds the horizontal component of lift.

- 135- During skidding turn to the right what is relationship between the component of lift, centrifugal force and load factor?**
- A) Centrifugal force is less than horizontal lift. and the load factor is increased.
 - B) Centrifugal force is greater than horizontal lift. and the load factor is increased.
 - C) Centrifugal force and the horizontal lift. are equal and the load factor is increased.
- 136- When airspeed decreases in a turn, what must be done to maintain level flight?**
- A) Decrease the angle of bank and or increase the angle of attack.
 - B) Increase the angle of bank and or decrease the angle of attack.
 - C) Increase the angle of attack and or increase angle of bank.
- 137- The primary reason the angle of attack must be increased to maintain a constant altitude during a coordinated turn, is because the:**
- A) Thrust is acting in different direction, causing a reduction in airspeed and loss of lift.
 - B) Vertical component of lift. has decreased as the result of the bank.
 - C) Use of aileron has increased the drag.
- 138- Which statement is true regarding impact pressure?**
- A) At high angle of attack this may account for as much as 40% to 50% of the total lift.
 - B) At low angle of attack this may account for as much as 25 to 30% of the total lift.
 - C) At high angle of attack this may account for as much as 25 to 30% of the total lift.
- 139- Which statement is true regarding C_L ?**
- A) C_L is determined by angle of attack.
 - B) C_L is determined by airfoil design.
 - C) C_L is the ratio between the lift. and dynamic pressure on a given airfoil.
 - D) All answers are correct is correct.
- 140- A pilot is entering an area where significant clear air turbulence has been reported. Which action is appropriate upon encountering the first ripple?**
- A) Maintain altitude and airspeed.
 - B) Adjust airspeed to that recommended for rough air.
 - C) Enter a shallow climb or descent at maneuvering speed.
- 141- The angle of attack, which produces the highest L/D ratio:**
- A) Remains constant as weight is changed, but decreases as altitude is increased.
 - B) Increases as weight or altitude is increased.
 - C) Remains constant as altitude is changed, but decreases as weight is reduced.
 - D) Remains constant regardless of weight or altitude.

142- Which factors are used to define the angle of attack of an airfoil?

- A) Chord line of the airfoil and the horizon.
- B) Bottom surface of the wing and the flight path.
- C) Mean chord of the airfoil and the relative wind.
- D) Relative wind and chord line.

143- During a coordinated turn, in level flight at a constant airspeed, centrifugal force is counterbalanced by:

- A) The weight of the airplane.
- B) The coordinated use of rudder control.
- C) The increased speed of the high wing and decreased speed of the low wing.
- D) A portion of lift. of the wing.

144- The true airspeed at which an airplane stalls varies with:

- A) Load factor, weight, and density altitude.
- B) Load factor and angle of attack.
- C) Density altitude, weight, and angle of attack.
- D) Groundspeed, load factor, and density altitude.

145- Compared to a no-wind condition, what affect would a 20-knot headwind component have on take-off performance?

- A) Actual groundspeed at rotation will be greater than VR.
- B) The airplane will reach critical engine failure indicated airspeed at a lower groundspeed.
- C) Critical engine failure speed and actual groundspeed will be the same as in a zero-wind condition.
- D) The effect of wind on initial acceleration will result in a longer takeoff roll.

**146- Which statement is true regarding the forces acting on an aircraft in a steady state climb?
The sum of all:**

- A) Forward forces are less than the sum of all rearward forces.
- B) Forward forces are greater than the sum of all rearward forces.
- C) Upward forces are greater than the sum of all downward forces.
- D) Upward forces are equal to the sum of all downward forces.

147- Rotation about the lateral axis of an airplane is known as:

- A) Yawing, and is controlled by the use of rudder.
- B) Rolling, and is controlled by the use of ailerons.
- C) Turning, and is controlled by the use of ailerons.
- D) Pitching, and is controlled by the use of elevators.

148- What effect will a decreasing air density have on lift? and drag?

- A) Lift. will increase and drag will decrease.
- B) Lift. and drag will increase.
- C) Lift. and drag will decrease.
- D) Lift. will decrease and drag will increase.

149- Vortices from large aircraft in flight sink at a rate of about:

- A) 200 to 300 feet per minute.
- B) 300 to 400 feet per minute.
- C) 400 to 500 feet per minute.

150- Load factor is the lift. generated by the wings of an aircraft at any given time:

- A) Divided by the total weight of the aircraft.
- B) Multiplied by the total weight of the aircraft.
- C) Divided by the basic empty weight of the aircraft.

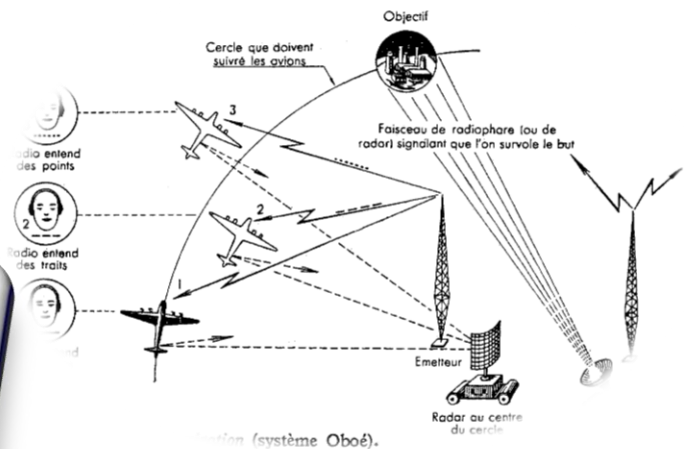
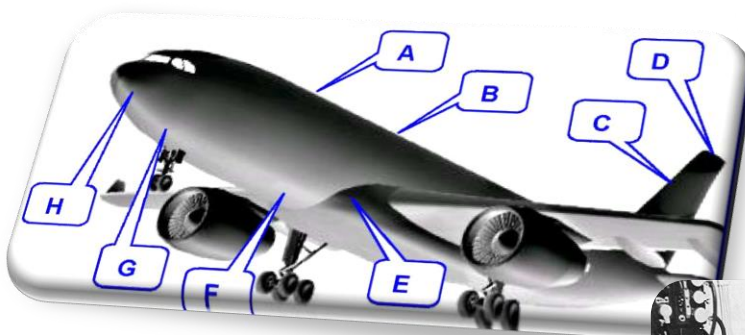
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	A	39	C	77	B	115	B
2	B	40	B	78	B	116	B
3	B	41	C	79	A	117	A
4	C	42	B	80	A	118	B
5	B	43	D	81	B	119	C
6	A	44	C	82	A	120	D
7	B	45	D	83	B	121	D
8	A	46	A	84	A	122	A
9	B	47	D	85	B	123	C
10	A	48	D	86	D	124	B
11	C	49	B	87	D	125	C
12	D	50	B	88	D	126	A
13	C	51	C	89	C	127	A
14	C	52	D	90	A	128	C
15	B	53	C	91	B	129	B
16	C	54	C	92	A	130	B
17	C	55	C	93	A	131	C
18	C	56	B	94	B	132	B
19	D	57	D	95	A	133	C
20	C	58	A	96	B	134	C
21	B	59	B	97	C	135	B
22	B	60	B	98	A	136	A
23	D	61	C	99	B	137	B
24	D	62	C	100	D	138	C
25	A	63	C	101	B	139	D
26	B	64	B	102	B	140	B
27	D	65	C	103	A	141	D
28	C	66	B	104	C	142	D
29	D	67	B	105	B	143	A
30	D	68	B	106	D	144	A
31	D	69	B	107	B	145	B
32	C	70	A	108	A	146	D
33	D	71	A	109	A	147	D
34	D	72	C	110	C	148	C
35	B	73	C	111	B	149	C
36	C	74	A	112	B	150	A
37	C	75	C	113	D		
38	A	76	B	114	A		

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

RADIO NAVIGATION



1- Dual VORs (units independent of each other except the antenna) are installed in an aircraft. What is the maximum permissible variation between the two bearing indications when one VOR receiver is checked against the other?

- A) Four degrees in flight and six degrees on the ground
- B) Four degrees on the ground and in flight
- C) Six degrees in flight and on the ground
- D) Six degrees in flight and four degrees on the ground

2- When CDI is centered with from indication you can read the radial that you are on shown by:

- A) Top index
- B) Reciprocal of the course set by OBS
- C) 90° to the left. of top index
- D) 90° to the right of top index

3- When dual independent VOR receivers are installed in an airplane (except the antenna) what is the maximum acceptable variation between the bearing indicators when checking the receivers using a VOT?

VOR#1 TO/FROM VOR#2 TO/FROM

- | | |
|-------------|----------|
| A) 360 TO | 002 TO |
| B) 180 TO | 183 TO |
| C) 001 FROM | 005 FROM |
| D) 180 FROM | 182 FROM |

4- What is the operational status of a VOR/VORTAC if you receive only the coded identifier every 30 seconds?

- A) The VOR is inoperative the DME is operating normally.
- B) The DME is inoperative the VOR is operating normally.
- C) Maintenance is being performed and that neither the VOR nor DME is operating normally.
- D) Both the VOR and DME signals are operating normally.

5- Unless otherwise determined through flight inspection procedures what is the normal expected service of an (L) class navigation air as it appears on an En-route Low Altitude Chart?

- A) 40NM
- B) 30NM
- C) 20NM
- D) 10NM

6- Unless otherwise determined through flight inspection procedures what is the maximum expected service range of an (H) class navigation air as it appears on an En-route High Altitude Chart?

- A) 130 NM
- B) 120 NM
- C) 110 NM
- D) 100 NM

7- When the off flag displays on VOR indicator:

- A) When you are flying directly over station
- B) When you are flying 90° to each side of selected course
- C) When the signals are unreliable
- D) All answers are correct

8- Which indication should you receive when you are directly over a VORTAC by using only the DME for this situation?

Flight altitude 6,500 Ft. MSL

NAVAID site elevation 500 Ft. MSL

- A) The DME would indicate approximately 1 NM.
- B) The DME would indicate "0" miles.
- C) The DME would indicate approximately 5 NM.
- D) The DME would "break lock" as you passed directly overhead.

9- If an airborne check point is used to check the VOR system for IFR operations, the maximum permissible bearing error will be:

- A) Plus 4, minus 6
- B) Plus or minus 6
- C) Plus 6, minus 4
- D) Plus or minus 4

10- When you are flying with right crosswind you should your heading for remaining on course.

- A) decrease - to the wind
- B) increase - to the wind
- C) decrease - perpendicular to wind
- D) increase - perpendicular to wind

11- VOR operates in..... and on Frequency between.....

- A) UHF - 108.00 through 117.95 MHz
- B) UHF - 108.00 through 117.95 kHz
- C) VHF - 108.00 through 117.95 MHz
- D) VHF - 108.00 through 117.95 kHz

12- Relative bearing: 270°, magnetic heading: 360°, on which magnetic bearing the aircraft is flying?

- A) magnetic bearing 270° from the station
- B) magnetic bearing 275° to the station
- C) magnetic bearing 90° from the station
- D) magnetic bearing 90° to the station

13- When checking one VOR, system against the other prior to an IFR flight, what is the maximum permissible variation between the two indicated bearings?

- A) 2
- B) 4
- C) 6
- D) 8

14- CDI in VOR indicator shows whether the aircraft is:

- A) Left. of course
- B) right of course
- C) on the selected course
- D) All answers are correct are correct

15- When entering a holding pattern below 14,000 Ft. MSL the initial outbound leg should not exceed?

- A) 3 minutes
- B) 4 minutes
- C) 1 minutes
- D) 2 minutes

16- Which distance is commonly displayed by the DME indicator?

- A) Slant range distance in nautical miles.
- B) Slant range distance in statute miles.
- C) The distance from the aircraft to a point at the same altitude directly above the VORTAC.
- D) Line of sight direct distance from aircraft to VORTAC in statute miles.

17- Where does the DME indicator have the greatest error between ground distance to the VORTAC and displayed distance?

- A) High altitudes far from the VORTAC
- B) High altitudes close to the VORTAC
- C) Low altitudes far from the VORTAC
- D) Low altitudes close to the VORTAC

18- The ILS localizer transmitter operates within which of the following frequency ranges:

- A) 106.50 to 112.10 MHZ
- B) 108.10 to 111.95 MHZ
- C) 109.50 to 117.90 MHZ
- D) 110.10 to 118.10 MHZ

19- What are the three parts of ILS component?

- A) Azimuth, heading and altitude information
- B) Azimuth, altitude and run way information
- C) VORTA , altitude and ADF information
- D) Vertical and lateral guidance, range and visual aid

20- Which ILS component is identified by the amber light?

- A) Inner marker
- B) Outer marker
- C) Outer compass locator
- D) Middle marker

21- When DME tuned to a VORDME station the absence of the Morse code every 30 seconds means that:

- A) Only DME is inoperative
- B) VOR is operative
- C) Only VOR is inoperative
- D) DME is operative

22- The needle in fix-card ADF, shows:

- A) bearing
- B) magnetic heading
- C) heading
- D) relative bearing

23- The DME error is:

- A) One half of Mile.
- B) 3% of distance.
- C) One mile when flying 6076 feet above station.
- D) 1/2 mile or 3% whichever is greater.

24- Reception range of NDB is depending on:

- A) power of NDB
- B) atmospheric condition
- C) time of day
- D) all of the above are correct

25- Night effect is caused by ionosphere layer:

- A) True
- B) False

26- When the needle of ADF shows the lightning instead of NDB that you selected, it's called:

- A) precipitation static
- B) thunderstorm effect
- C) night effect
- D) Shoreline effect

27- ADF indicator has off-flag to warn you unreliable signals:

- A) True
- B) False

28- One way to ensure receive usable signal from NDB is:

- A) disregarding ADF
- B) hearing Morse code
- C) leave the identifier tune-up whenever you use ADF
- D) none of above

29- The ADF is tuned to a radio beacon if the magnetic heading is 040° and the relative Bearing is 290°, the magnetic bearing TO that radio beacon would be:

- A) 150°.
- B) 285°.
- C) 330°.
- D) 105°.

30- Civil aircraft can use TACAN facility, just by using it's:

- A) Distance
- B) direction
- C) a + b
- D) heading

31- The radio beams that is transmitted by VORs are called:

- A) DME
- B) radial
- C) bearing
- D) Pulse

32- Radio beams which are transmitted by VOR from

- A) Counter clockwise - true north
- B) Clockwise - true north
- C) Counter clockwise - magnetic north
- D) Clockwise - magnetic north

33- Victor airway is a route that is established:

- A) By NDB bearings
- B) between two VORs
- C) between two NDBs
- D) B & C are correct

34- DME Morse code will be heard:

- A) Every 15 seconds
- B) Every 20 seconds
- C) Every 30 seconds
- D) Every 3 to 4 seconds

35- Slant range error is greatest when you are:

- A) Directly close the station
- B) At higher altitude
- C) A & B are correct
- D) None of above

36- NDB signals are transmitted in the range between:

- A) 190 kHz-535 kHz
- B) 190 kHz-335 kHz
- C) 190 kHz-353 MHz
- D) 190 kHz-535 MHz

37- Relative bearing is the clockwise angle between and facility.

- A) Aircraft - VOR
- B) Heading-VOR
- C) Aircraft's nose — NDB*
- D) Lateral axis of aircraft — NDB

38- When checking the course sensitivity of a VOR receiver how many degrees should the OBS be rotated to move the CDI from the center to the last dot on either side?

- A) 5-10
- B) 10-12
- C) 15 -18
- D) 18-20

39- Given:

Wingtip bearing change	15°
Elapsed time between bearings	8 min
True airspeed	90 kts
Fuel flow	8.6 Gal/hr
Wind	Calm

The time, distance and fuel required to fly the station is:

- A) 48 min - 32 NM - 4.58 gal
- B) 32 min - 48 NM - 4.58 gal
- C) 27 min - 45 NM - 6.50 gal
- D) 48 min - 48 NM - 4.58 gal

40- What is the DME error when flying at 50 NM from the station?

- A) 0.5 NM
- B) 1.5 NM
- C) 1 NM
- D) 2.5 NM

41- When using VOT to make a VOR receiver check the CDI should be centered and the OBS should indicate that the aircraft is on the

- A) Radial 090°
- B) Radial 180°
- C) Radial 270°
- D) Radial 360°

42- In most VOR receivers the course deviation indicator is so calibrated that a full-scale deflection is registered when the aircraft's position is on a bearing that is:

- A) 1° from the selected course when near the station and 10° from the selected course at a more distant location.
- B) 10 NM or more to the left. or right of the selected course.
- C) 5° or more from the selected bearing.
- D) 10° or more from the selected bearing.

43- Pointing an aircraft directly to the NDB station regardless of wind is called:

- A) NDB orientation
- B) Homing
- C) tracking
- D) bracketing

44- For minimizing shoreline effect, you should avoid flying to the station with angle:

- A) Less than 40°
- B) More than 30°
- C) Less than 30°
- D) At right angle

45- To track outbound on the 180 radial of a VOR station the recommended procedure is to set the OBS to

- A) 360° and make heading corrections away from the CDI needle.
- B) 360° and make heading corrections toward the CDI needle.
- C) 180° and make heading corrections away from the CDI needle.
- D) 180° and make heading corrections toward the CDI needle.

46- To track inbound on the 215 radial of a VOR station the recommended procedure is to set the OBS on:

- A) 215° and make heading corrections toward the CDI needle.
- B) 215° and make heading corrections away from the CDI needle.
- C) 035° and make heading corrections toward the CDI needle.
- D) 035° and make heading corrections away from the CDI needle.

47- The relative bearing on an ADF changes from 270° to 260° in 2 minutes elapsed time. If the ground speed is 155 knots the distance to that station would be:

- A) 20 NM
- B) 25.8 NM
- C) 31 NM
- D) 62 NM

48- At 120 knots ground speed the relative bearing on an ADF changes from 090° to 095° in 1-minute elapsed time. The distance to the station would be:

- A) 12 NM
- B) 16 NM
- C) 18 NM
- D) 24 NM

49- The ADF is tuned to a non-directional radio beacon and the relative bearing changes from 090° to 100° in 1.5 minutes elapsed time. Time to station would be:

- A) 6 minutes
- B) 9 minutes
- C) 12 minutes
- D) 15 minutes

50- The ADF is tuned to a non-directional radio beacon and the relative bearing changes from 270° to 265° in 1.5 minutes elapsed time. Time to the station would be:

- A) 12 minutes
- B) 18 minutes
- C) 21 minutes
- D) 24 minutes

51- The ADF is tuned to a non-directional radio beacon and the relative bearing changes from 090° to 100° in 2.5 minutes elapsed time. If the ground speed is 90 knots , the distance and time to station would be:

- A) 2.25 NM and 1.5 minutes
- B) 15 NM and 22.5 minutes
- C) 22.5 NM and 15 minutes
- D) 32 NM and 18 minutes

52- Given:

Wingtip bearing change	10°
Elapsed time between bearings	4 min
Fuel flow	12 Gal/hr.

Calculate the fuel required to fly to the station:

- A) 4.8 Gal
- B) 8.4 Gal
- C) 12 Gal
- D) 24 Gal

53- For identifying a VOR station you should

- A) Tune the frequency correctly
- B) Hearing the VOR Morse code
- C) Try to keep the CDI centered
- D) A&B are correct

54- When there is no Morse code of VOR station, it means that the:

- A) Station is not operational.
- B) Station is shut down for maintenance.
- C) Station has no Morse code.
- D) Station is very close to us.

55- Each dot on the scale of CDI deviation represents:

- A) 1 degree off course
- B) 2 degrees off course
- C) 3 degrees off course
- D) 4 degrees off course

56- What is the total correction angle when an aircraft has flown 48 NM and experienced 4 NM left. drift. and distance to station is 120 NM?

- A) 3°
- B) 5°
- C) 7°
- D) 9°

57- An aircraft is maintaining a magnetic heading of 275° and ADF shows a relative bearing of 070°. This indicates that the aircraft is crossing the:

- A) 070° MB FROM
- B) 165° MB FROM
- C) 205° MB FROM
- D) 345° MB FROM

58- The magnetic heading is 305° and the ADF shows a relative bearing of 135°. The magnetic bearing from the radio beacon would be:

- A) 080°
- B) 135°
- C) 170°
- D) 260°

59- What is the maximum error of VOR over airborne checkpoint when we compare two VOR against each other?

- A) ±6°
- B) ± 4°
- C) 4°
- D) 6°

60- What is the shape of VOR antenna?

- A) Shark's fin
- B) V shape
- C) Loop shape
- D) None of the above

61- What is the shape of DME antenna?

- A) Shark's fin
- B) V shape
- C) Loop shape
- D) All of the above

62- What would be the MB from with MH of 349° and MB To of 318°?

- A) 327°
- B) 329°
- C) 138°
- D) 318°

63- Which one is correct?

- A) $RB = MH + MB$
- B) $MH = RB + MB$
- C) $MB = MH - RB$
- D) $MB = MH + RB$

64- If the relative bearing changes from 090° to 100° in 2.5 minutes elapsed time, the time to the station would be

- A) 12 minutes.
- B) 15 minutes.
- C) 18 minutes.
- D) 22 minutes.

65- The ADF indicates a wingtip bearing change of 10° in 1.5 minutes elapsed time and the G/S is 150 knots what is the distance to the station?

- A) 15.0 NM
- B) 22.5 NM
- C) 27.0 NM
- D) 35.5 NM

66- With the parameters of compass heading 040°, distance flown 20 NM distance to destination 229 NM and distance off course is 5 NM to the left. what is the compass heading to destination?

- A) 35°
- B) 24°
- C) 50°
- D) 56°

67- For avoiding night effect you should:

- A) Use strong power station
- B) Select NDBs with frequency less than 350 kHz.
- C) Fly at higher altitude.
- D) Fly at lower altitude.

68- The DME actually measures:

- A) Horizontal distance.
- B) Slant distance.
- C) Horizontal distance and corrected for altitude.
- D) Slant distance and corrected for altitude.

69- VORs are divided into 3 classes according to their:

- A) Range
- B) Reception altitude
- C) Shape
- D) A & B are correct.

70- VOR airborne equipment consists of:

- A) Antenna
- B) Receiver
- C) Indicator
- D) All answers are correct

71- VOR indicator consists of:

- A) To/from indicator and course selector
- B) Course deviation indicator
- C) Dot
- D) All answers are correct.

72- You are flying on 120° Radial of a VOR station, in no wind condition what heading should fly to stay on 120° radials:

- A) No definite heading because heading has no effect on VOR.
- B) Heading of 120°
- C) Heading of 300°
- D) Both B and C is correct

73- Shoreline effect can be little or minimized when flying:

- A) Over ground to water with an angle greater than 30°
- B) Over water inside the land with an angle greater than 30°.
- C) Over water and selecting a land base with a bearing greater than 30°.
- D) Over water and selecting a land base with frequency lower than 350 KHZ.

74- Which is true about Homing when using ADF during crosswind conditions?

- A) To a radio station results in a curved path that leads to the station.
- B) Practical navigation method for flying both to and from a radio station.
- C) To a radio station requires that the ADF have an automatically or manually rotatable azimuth.
- D) Is most effective method in strong cross wind

75- Determining your position with respect to VOR facility is known as:

- A) VOR orientation
- B) cross check
- C) intercepting
- D) tracking

76- When flying to the station on a predetermined radial for staying on the radial during crosswind:

- A) The WCA must be added to the course selected.
- B) By maintaining CDI on center position.
- C) By adding WCA to the heading.
- D) By flying a heading equal to the selected course.

77- The relative bearing of an aircraft which flying directly to the station in no wind condition is:

- A) The same as magnetic heading.
- B) Aircraft heading $\pm 180^\circ$.
- C) Zero
- D) Reciprocal of magnetic bearing.

78- For elimination of terrain effect the pilot should select:

- a) Only strong station
- b) Station with frequency lower than 350 kHz.
- c) A bearing which is greater than 30° relative to station.
- d) A normal NDB station but should notify the ADF fluctuation.

79- The magnetic heading is 315° and the ADF shows a relative bearing of 140° , the magnetic bearing FROM the radio beacon would be:

- A) 095°
- B) 005°
- C) 275°
- D) 185°

80- The magnetic heading is 350° and the relative bearing to a radio beacon is 240° what would be the magnetic bearing TO that radio beacon?

- A) 050°
- B) 230°
- C) 295°
- D) 320°

81- When using VOT to make a VOR receiver check, the CDI should be centered with the OBS should indicate that the aircraft is on the:

- A) Radial 090°.
- B) Radial 180°.
- C) Radial 360°.
- D) Radial 270°.

82- The range of an NDB frequency is:

- A) 200-415 MHZ-L/MF.
- B) 190-535 KHZ-L/MF.
- C) 200-1750 KHZ-VHP.
- D) 30-3000 KHZ-L/MF.

83- What is the optimum accuracy associated with VOR navigation on victor airways?

- A) $\pm 5^\circ$
- B) $\pm 2^\circ$
- C) $\pm 1^\circ$
- D) $\pm 3^\circ$

84- The Low Altitude VOR (L-VOR) is normally used:

- A) Long distance airways.
- B) For distance up to 40 NM above 1000 feet.
- C) Part of approach only.
- D) For distance up to 40 NM above 18000 feet.

85- The OFF flag comes into view when:

- A) Flying abeam the station.
- B) The signal receiving is TOO weak.
- C) Flying toward the station with uncorrected selected course.
- D) All of the Above.

86- When flying on a radial to the station the positive identification of station passage is by :

- A) Fluctuating of CDI.
- B) Changing TO/FROM flag.
- C) OFF flag indication.
- D) By changing the selected course on dial.

87- DME displays distance in:

- A) Statute miles.
- B) Depended on construction of component.
- C) Nautical miles
- D) Statute/Nautical miles depended on pilot request.

88- Finding your exact position by using two VORs is called:

- A) VOR orientation
- B) Cross check
- C) Intercepting
- D) Bracketing

89- Depending on altitude and line of sight, you can use DME facility:

- A) up to 130 NM
- B) up to 45 NM
- C) up to 199 NM
- D) up to 100 NM

90- What is the range of NAV-COM, VHF frequency?

- A) 108.00-136.975 MHZ.
- B) 108.00-117.95 KHZ.
- C) 108.00-118.00 KHZ.
- D) 108.00-117.95 MHZ.

91- The most disadvantages of VOR operation is:

- A) Freedom from interference.
- B) Extreme accuracy.
- C) Automatic wind correction.
- D) Line of sight transmission.

92- The best procedure for flying toward NDB is:

- A) Homing
- B) Flying a heading equal to present bearing.
- C) Flying toward station by keeping the head of pointer at top index.
- D) Selecting a heading which is equal to magnetic bearing of aircraft at the present time.

93- As altitude increase over the VOR, the cone of confusion will be greater:

- A) False
- B) True

94- DME shows ground speed and distance information when tuned to a:

- A) VOR station.
- B) DME station.
- C) VOR-DME station.
- D) All of the above.

95- What is the maximum permissible error for VOT:

- A) 5°
- B) 4°
- C) ± 6° on the ground.
- D) ± 4° on the ground

96- The T- VOR may be used for approach and most accurate:

- A) Above 12500 feet.
- B) Above 1000 feet within 25 NM.
- C) At long distance and low altitude.
- D) Below 1000 feet within 25 NM.

97- Magnetic bearing from station is found by:

- A) RB +Aircraft heading.
- B) RB ± Aircraft heading.
- C) RB + Aircraft heading ± 180°
- D) It's read directly from tail of the needle.

98- The needle of Movable-card ADF shows if magnetic heading set correctly on top index:

- A) relative bearing
- B) magnetic bearing from the station
- C) magnetic bearing to the station
- D) B & C are correct

99- One of the advantages of VOR against NDB is:

- A) Interference - free
- B) more distance coverage
- C) line of sight
- D) B & C are correct

100- VOR signals are restricted by obstacles and terrain is known as:

- A) Interference - free
- B) Line of sight
- C) VOR limit
- D) VOR reception

Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	B	26	B	51	C	76	B
2	A	27	B	52	A	77	C
3	B	28	B	53	D	78	A
4	A	29	C	54	A	79	C
5	A	30	A	55	B	80	B
6	A	31	B	56	C	81	C
7	D	32	D	57	B	82	B
8	A	33	B	58	D	83	C
9	B	34	C	59	C	84	B
10	B	35	C	60	B	85	D
11	C	36	A	61	A	86	B
12	C	37	C	62	C	87	C
13	B	38	B	63	D	88	A
14	D	39	B	64	B	89	C
15	C	40	B	65	B	90	A
16	A	41	D	66	D	91	D
17	B	42	D	67	C	92	A
18	B	43	B	68	B	93	B
19	D	44	C	69	D	94	C
20	D	45	D	70	D	95	D
21	A	46	C	71	D	96	B
22	D	47	C	72	D	97	C
23	D	48	D	73	A	98	C
24	A	49	B	74	A	99	A
25	A	50	B	75	A	100	B

Flight Operation Officer Note

Flight Operation Officer Note

Flight Operation Officer Note

OBBI/BAH
BAHRAIN INTL

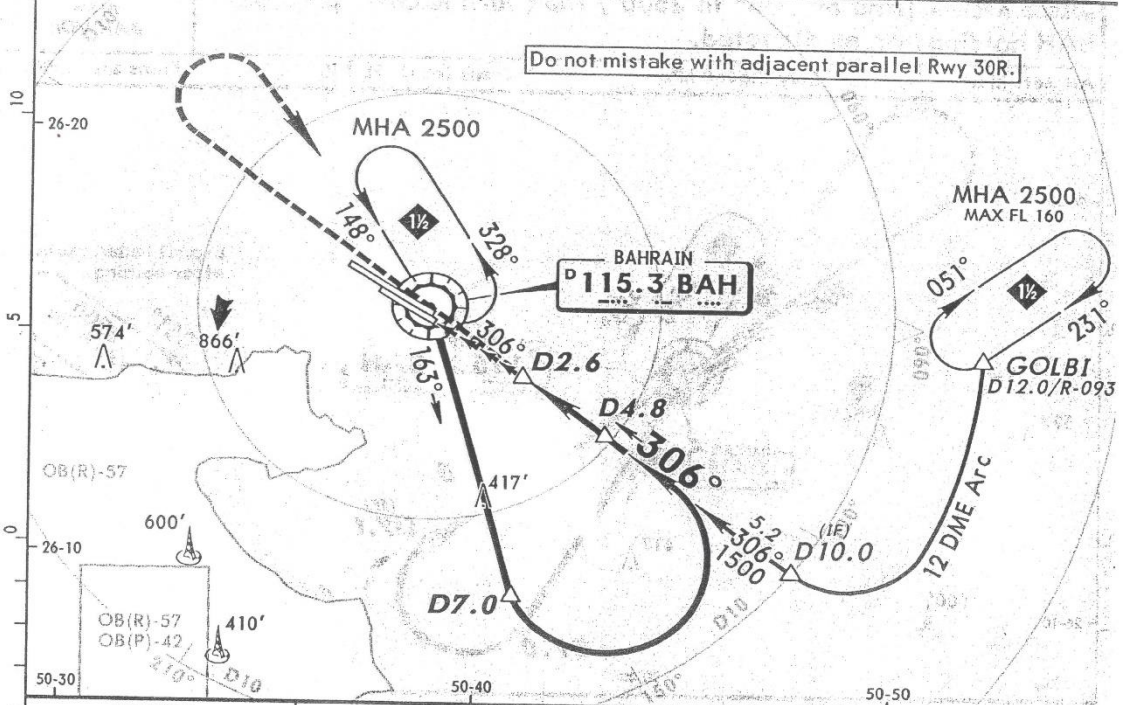


31 OCT 08 13-3

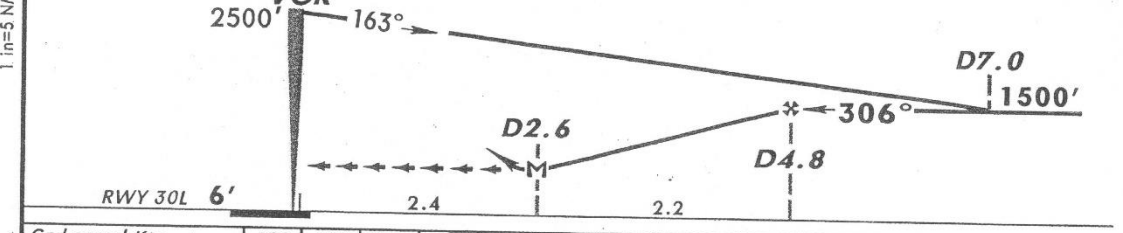
BAHRAIN, BAHRAI
VISUAL VOR DME Rwy 30

ATIS 127.2		BAHRAIN Approach (R) 127.85		BAHRAIN Tower 118.5		Ground 121.85 <i>A</i>	
VOR BAH 115.3	Final Apch Crs 306°	Minimum Alt D4.8 1500' (1494')	MDA(H) 800' (794')	Apt Elev RWY 6'	6'		
MISSED APCH: Climb on 306° to 2500', then turn RIGHT to rejoin BAH holding, or as directed.							
Alt Set: hPa		Rwy Elev: 0 hPa		Trans level: FL 150		Trans alt: 13000'	

159-47



BAH DME	3.0	4.0	5.0
ALTITUDE	940'	1260'	1580'



Gnd speed-Kts	120	140	160	180	ALS PAPI-L 2500' on 306°
Descent Gradient 5.3%	644	751	859	966	
MAP at D2.6					

LANDING RWY 30L	
MDA(H) 800' (794')	
ALS out	

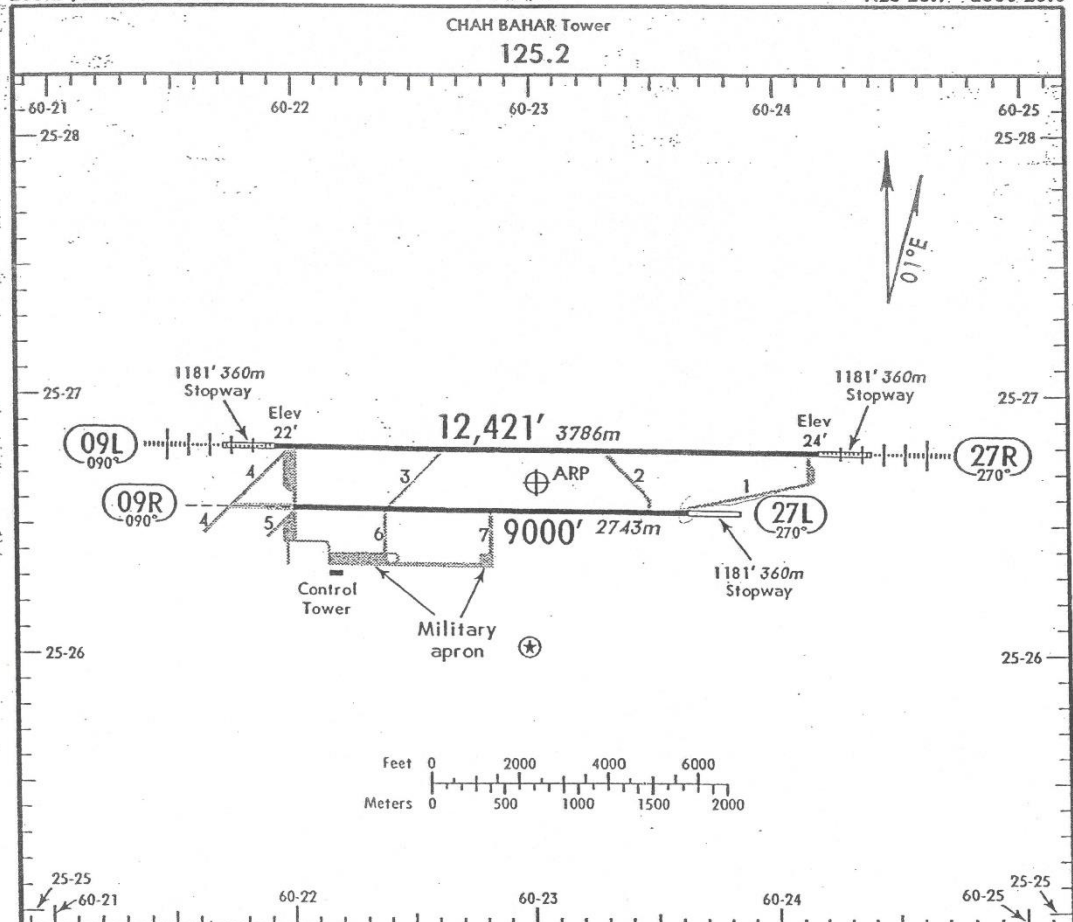
C	4000m
D	

ANS OPS 3

OIZC
 Apt. Elev 24'
 266.2°/2.0 from CBH-116.9

JEPPESSEN
 31 MAR 00 (13-1)

CHAH BAHAR, IRAN
KONARAK AB
 N25 26.7 E060 23.0



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS			WIDTH
		LANDING	BEYOND	TAKE-OFF	
		Threshold	Glide Slope		
09L 27R	HIRL HIALS				150' 46m
09R 27L	RL ALS (configuration unknown)				150' 46m

TAKE-OFF
AIR CARRIER
All Rwy's

A
 B
 C

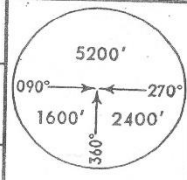
400m

OIZC/ZBR
KONARAK

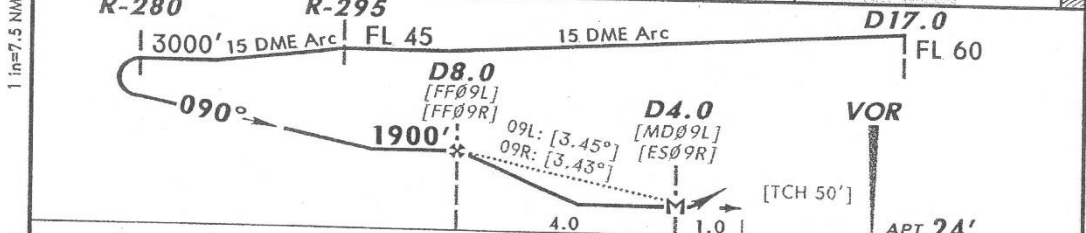
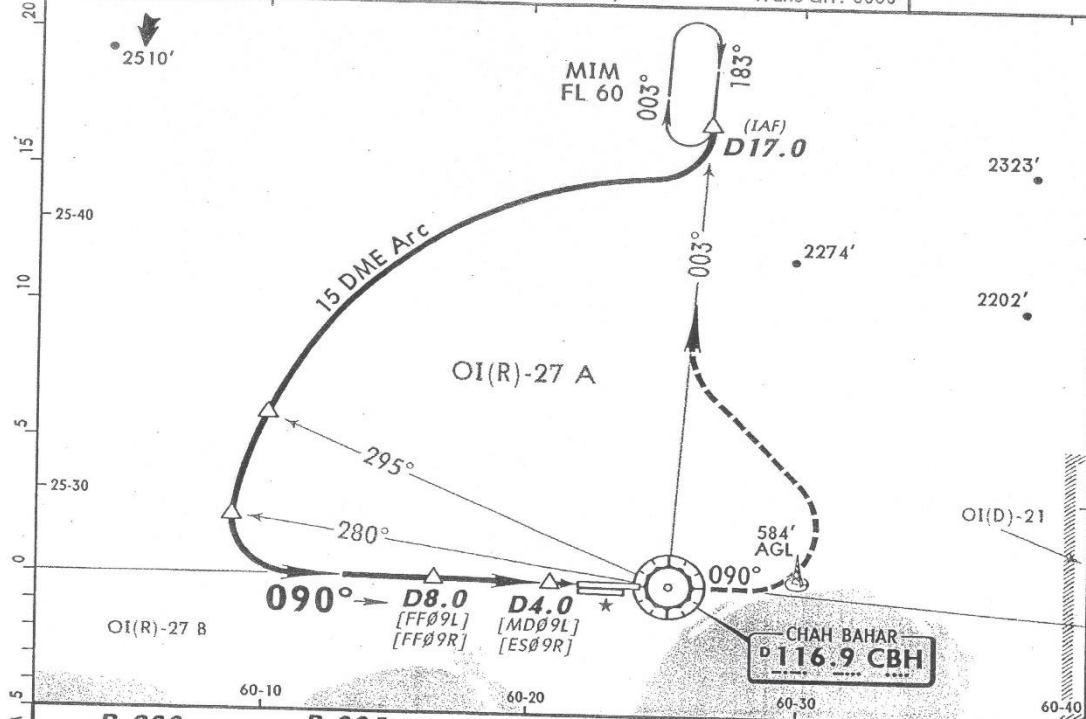
JEPPESEN
23 JAN 09 (13-1)

CHAH BAHAR, IRAN
VOR DME-1 Rwy 09L/R

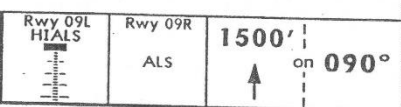
CHAH BAHAR Approach			CHAH BAHAR Tower (R)	
123.4			125.2	
VOR CBH 116.9	Final Apch Crs 090°	Minimum Alt D8.0 1900' (1876')	MDA(H) 390' (366')	Apt Elev 24'
MISSED APCH: Climb on 090° to 1500', then turn LEFT to intercept and follow R-003, rejoin holding at FL 60.				
Alt Set: hPa	Apt Elev: 1 hPa	Trans level: By ATC	Trans alt: 3000'	



MSA
CBH VOR



Gnd Speed-Kts	70	90	100	120	140	160
09L: Descent angle [3.45°]	427	549	611	733	855	977
09R: Descent angle [3.43°]	425	546	607	728	850	971
MAP at D4.0						



STRAIGHT-IN LANDING RWY 09L/R		CIRCLE-TO-LAND	
MDA(H) 390' (366')			
	ALS out	Max Kts	MDA(H)
A		100	430' (406')
B	1600m	135	530' (506')
C		180	630' (606')
D	2000m	205	730' (706')

PANS OPS 4

CHANGES: Communications. Descent angle.

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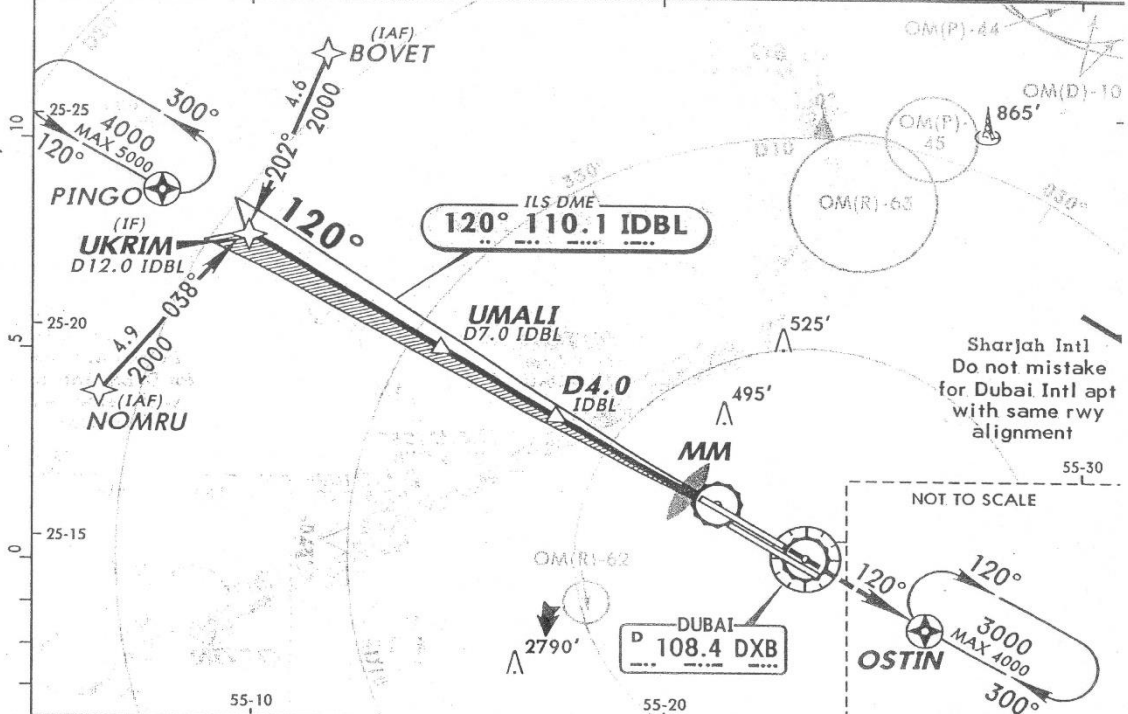
OMDB/DXB
DUBAI INTL



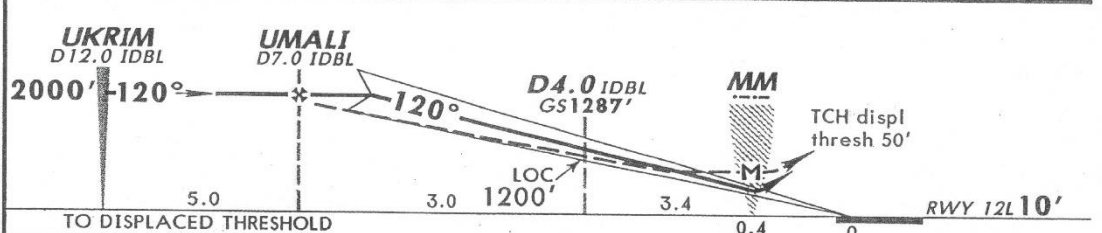
JEPPESSEN
10 APR 09 **(11-1)**

DUBAI, UAE
ILS Rwy 12L

D-ATIS 131.7	DUBAI Arrivals (APP/R) 124.9	DUBAI Director (APP/R) 127.9	DUBAI Tower 118.75 119.55	Ground 118.35
LOC IDBL 110.1	Final Apch Crs 120°	GS D4.0 IDBL 1287' (1277')	CAT IIIA ILS DH 50'	CAT I & II ILS Refer to Minimums
Apt Elev 59' RWY 10'				
MISSED APCH: Climb to 3000' direct to OSTIN and hold.				
Alt Set: MB		Rwy Elev: 0 MB	Trans level: FL 150	Trans alt: 13000'
1. RNAV/RNP5 required. 2. ILS DME reads zero at TDZ.				



LOC (GS out)	IDBL DME ALTITUDE	6.0 1860'	5.0 1550'	4.0 1240'	3.0 930'	2.0 620'	1.0 310'
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Gnd speed-Kts	120	140	160	180	HIALS-II PAPI PAPI 	3000' ↑ → OSTIN	
ILS GS	3.00°	647	755	862			970
LOC Descent Gradient	4.7%	571	666	762			856

STRAIGHT-IN LANDING RWY 12L					LOC (GS out)		CIRCLE-TO-LANE	
CAT IIIA DH 50'	CAT II RA 100' DA(H) 110' (100')	CAT I DA(H) 210' (200')		MDA(H) 590' (580')				
		FULL	TDZ or CL out	ALS out	MM out	ALS out		
C	RVR 200m	RVR 350m	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m	RVR1500m VIS1600m	2400m	NOT AUTHORIZED
D						2000m	2800m	

ANS OPS 3 CAT III: Min RVR 50m

214-21

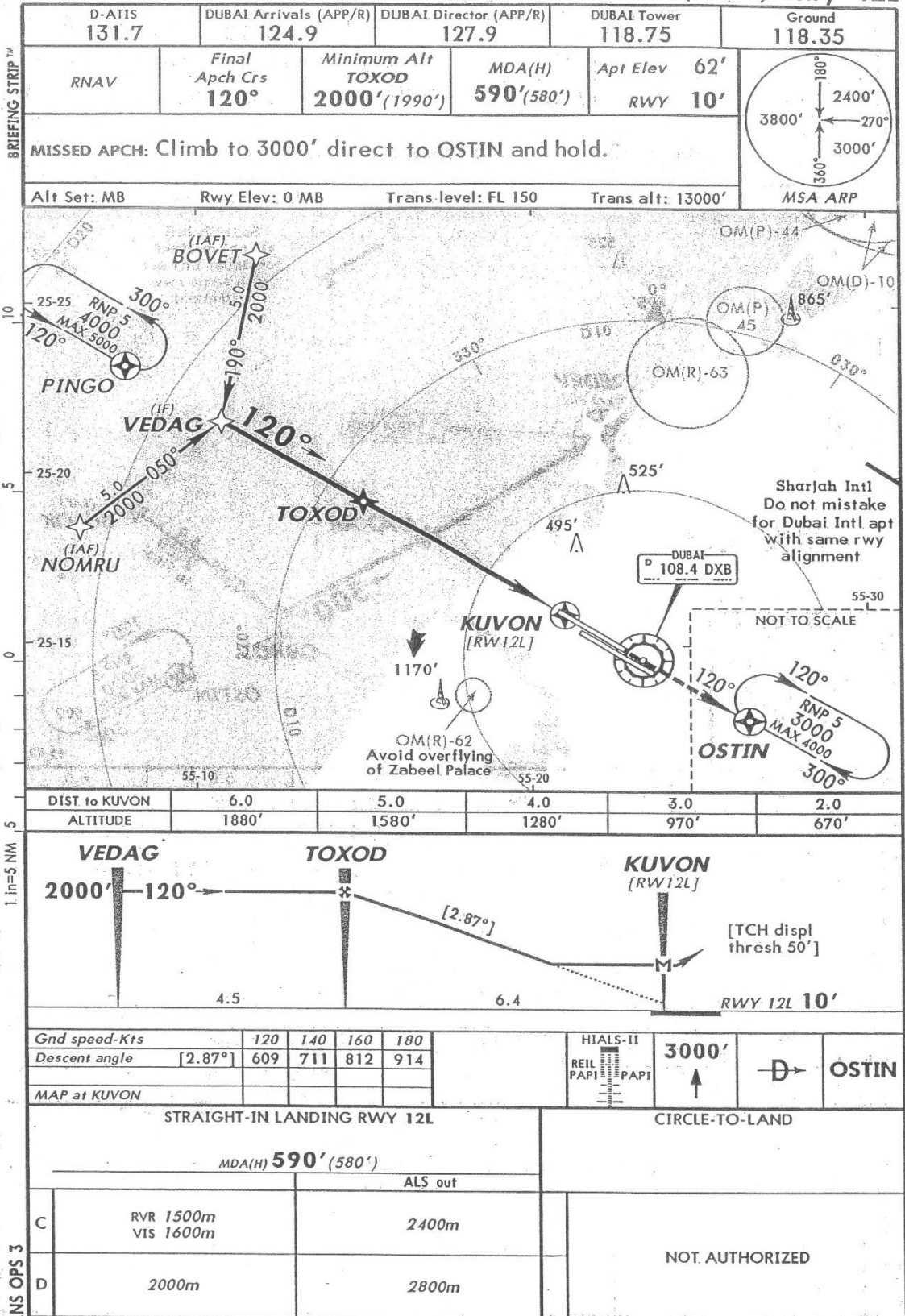
1 in=5 NM

OMDB/DXB
DUBAI INTL



JEPPESSEN
6 JUN 08 (12:1)

DUBAI, UAE B
RNAV (GNSS) Rwy 12L

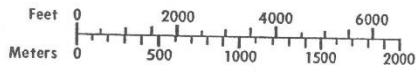
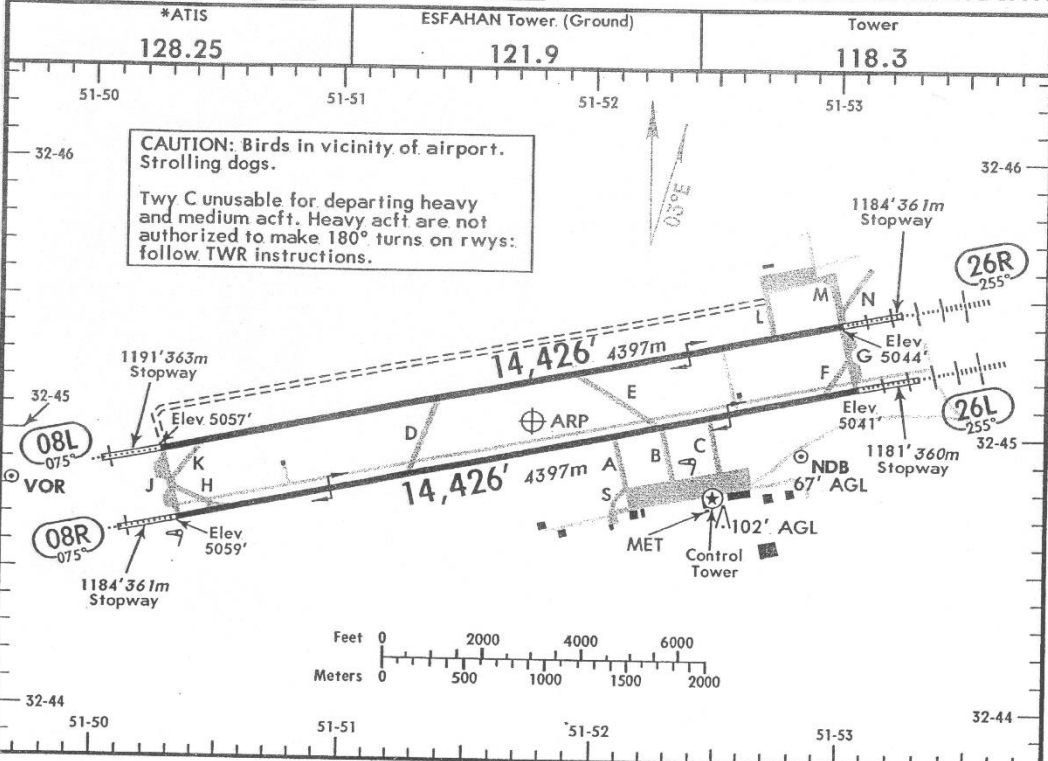


OIFM/IFN
 Apt Elev 5059'
 N32 45.1 E051 51.8



JEPPESSEN
 7 DEC 07 (11-1)

ESFAHAN, IRAN
 SHAHID BEHESHTI INTL



RWY	ADDITIONAL RUNWAY INFORMATION	USABLE LENGTHS		TAKE-OFF	WIDTH
		Threshold	Landing Beyond		
08L	HIRL(60m) ALS HST-1 PAPI-L(angle 3.00°)				148' 45m
26R	HIRL(60m) HIALS HST PAPI-L(angle 2.65°)		13,211' 4027m		
08R	HIRL(60m) ALS PAPI-L(angle 3.00°)				148' 45m
26L	HIRL(60m) HIALS PAPI-L(angle 3.02°)				

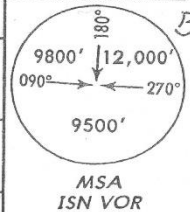
① Rwy 08R/26L primarily used as taxiway.

	TAKE-OFF	
	AIR CARRIER (JAA)	
	All Rwys	
	RL & RCLM	NIL (DAY only)
C	400m	500m
D		

CHANGES: None. © JEPPESSEN SANDERSON, INC., 1998, 2007. ALL RIGHTS RESERVED.

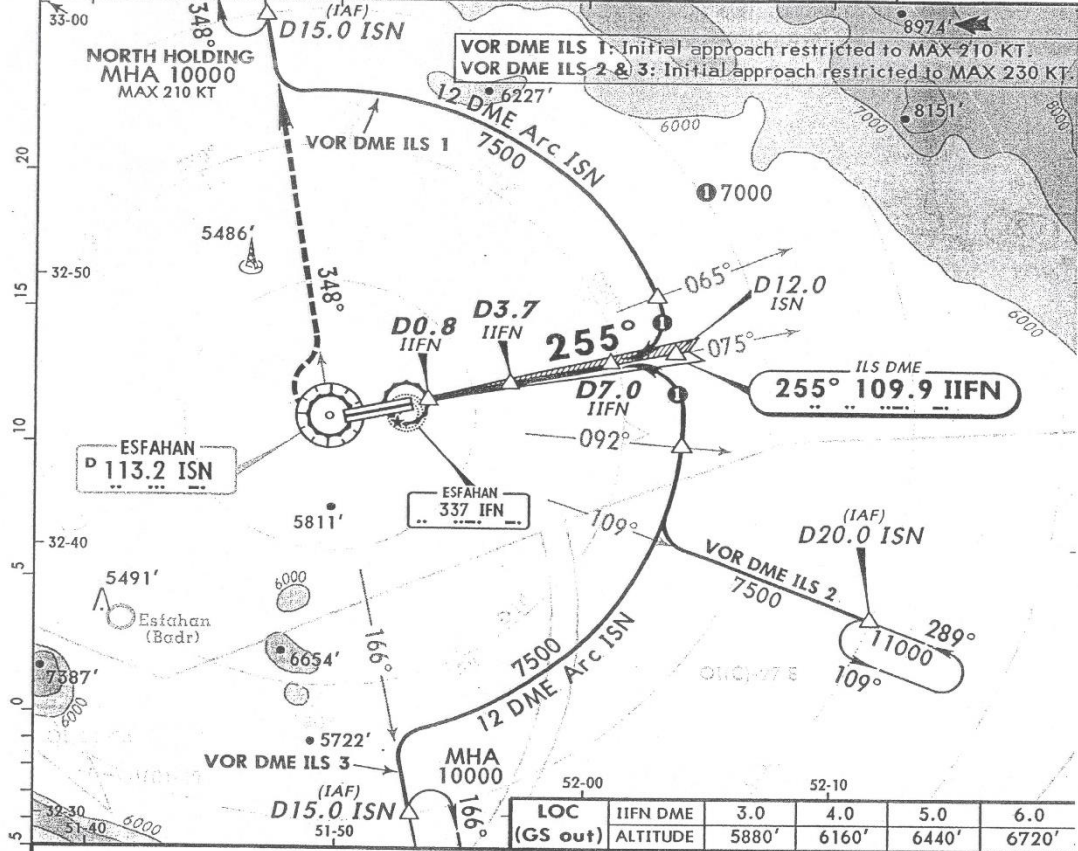
OIFM/IFN **JEPPESSEN** ESFAHAN, IRAI
 SHAHID BEHESHTI INTL 7 DEC 07 **(11-1)** VOR DME ILS 1, 2 & 3 Rwy 26R

*ATIS 128.25	ESFAHAN Approach 124.6	ESFAHAN Tower 118.3	Ground 121.9
LOC IIFN 109.9	Final Apch Crs 255°	GS D3.7 IIFN 6077' (1033')	ILS DA(H) 5277' (233')
Apt Elev 5059'			RWY 5044'

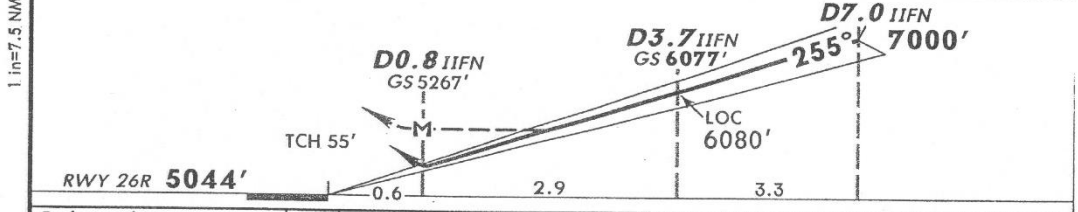


MISSED APCH: Climb STRAIGHT AHEAD to VOR, then turn RIGHT to intercept R-348 and rejoin NORTH holding at 10000'.
 Alt Set: hPa Rwy Elev: 172 hPa Trans level: By ATC Trans alt: 13000'

101-35



LOC (GS out)	IIFN DME	3.0	4.0	5.0	6.0
	ALTITUDE	5880'	6160'	6440'	6720'



Gnd speed-Kts	120	140	160	180		HIALS	ISN 10000'	ISN
ILS GS 2.63° or	568	663	758	852		PAPT	113.2	on 113.2
LOC Descent Gradient 4.6%							RT	R-348
MAP at D0.8 IIFN								

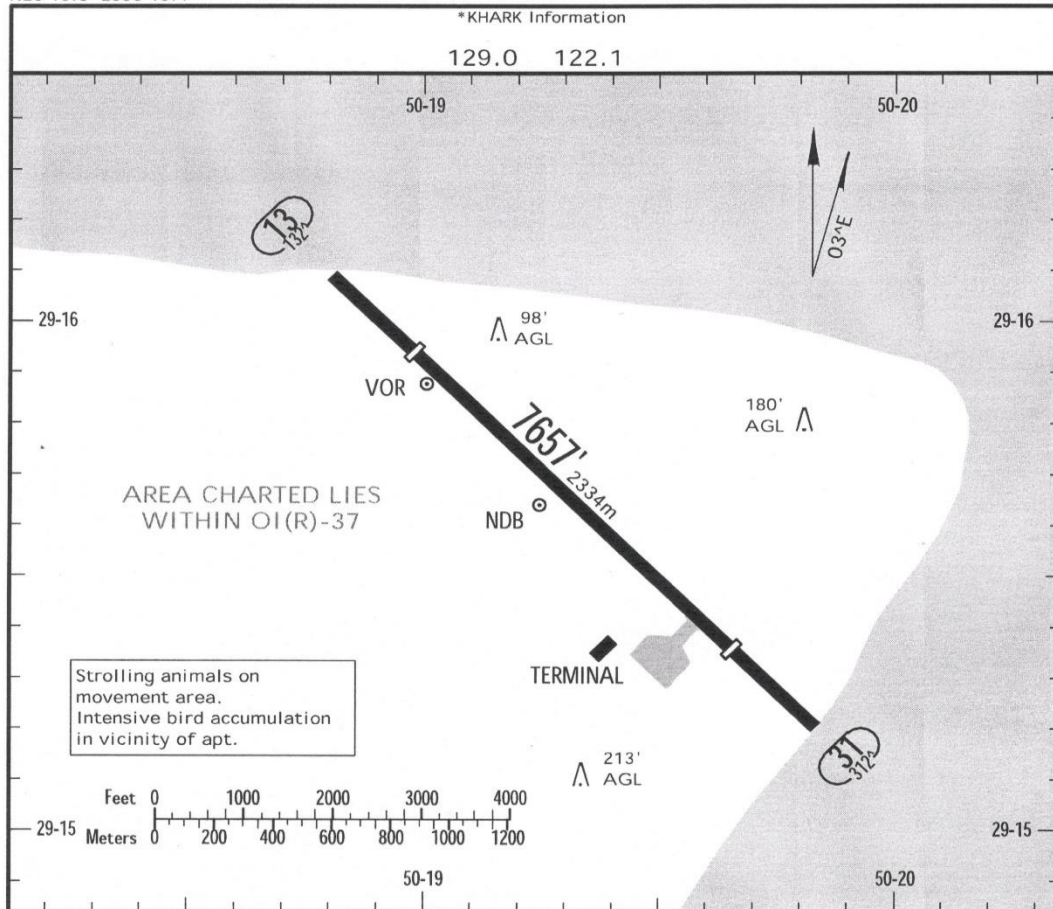
STRAIGHT-IN LANDING RWY 26R		CIRCLE-TO-LAND	
ILS		LOC (GS out)	
DA(H) 5277' (233')	MDA(H) 5710' (666')	Not authorized South of airport	
FULL	ALS out	ALS out	
		Max Kts	MDA(H)
C	800m	1200m	180 5760' (701')
D			205 5780' (721')
			3200m
			3600m

CHANGES: Trans alt. © JEPPESSEN SANDERSON, INC., 1998, 2007. ALL RIGHTS RESERVED.

OIBQ/KHK
 Apt Elev 29'
 N29 15.6 E050 19.4

JEPPESSEN
 9 SEP 11 (10-9)

KHARK ISLAND, IRAN
 KHARK



RWY		ADDITIONAL RUNWAY INFORMATION			
		USABLE LENGTHS		TAKE-OFF	WIDTH
		Threshold	Landing Beyond Glide Slope		
13 31	HIRL (60m) PAPI-L (angle 3.0°)	6345' 1934m 6332' 1930m		6332' 1930m 6345' 1934m	148' 45m

TAKE-OFF	
AIR CARRIER (JAA) All Rwys	
RL & RCLM	NIL (DAY only)

A	400m	500m
B		
C		
D	NOT APPLICABLE	

CHANGES: Runway designator. Lights. Minimums. | JEPPESSEN, 1998, 2011. ALL RIGHTS RESERVED.

OISS/SYZ
 SHAHID DASTGHAIB INTL

JEPPESEN

SHIRAZ, IRAN

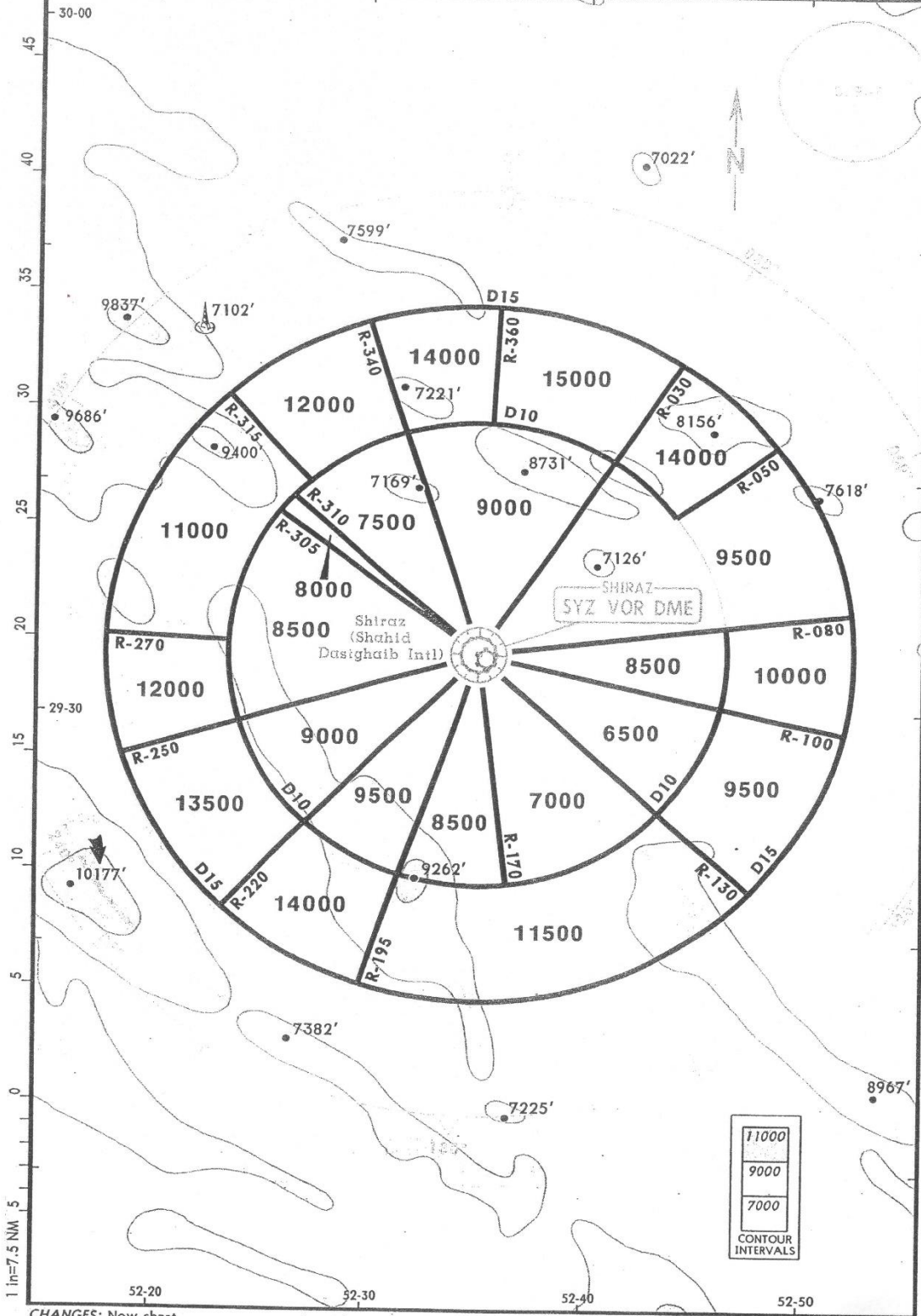
11 APR 08 (10-1R1)

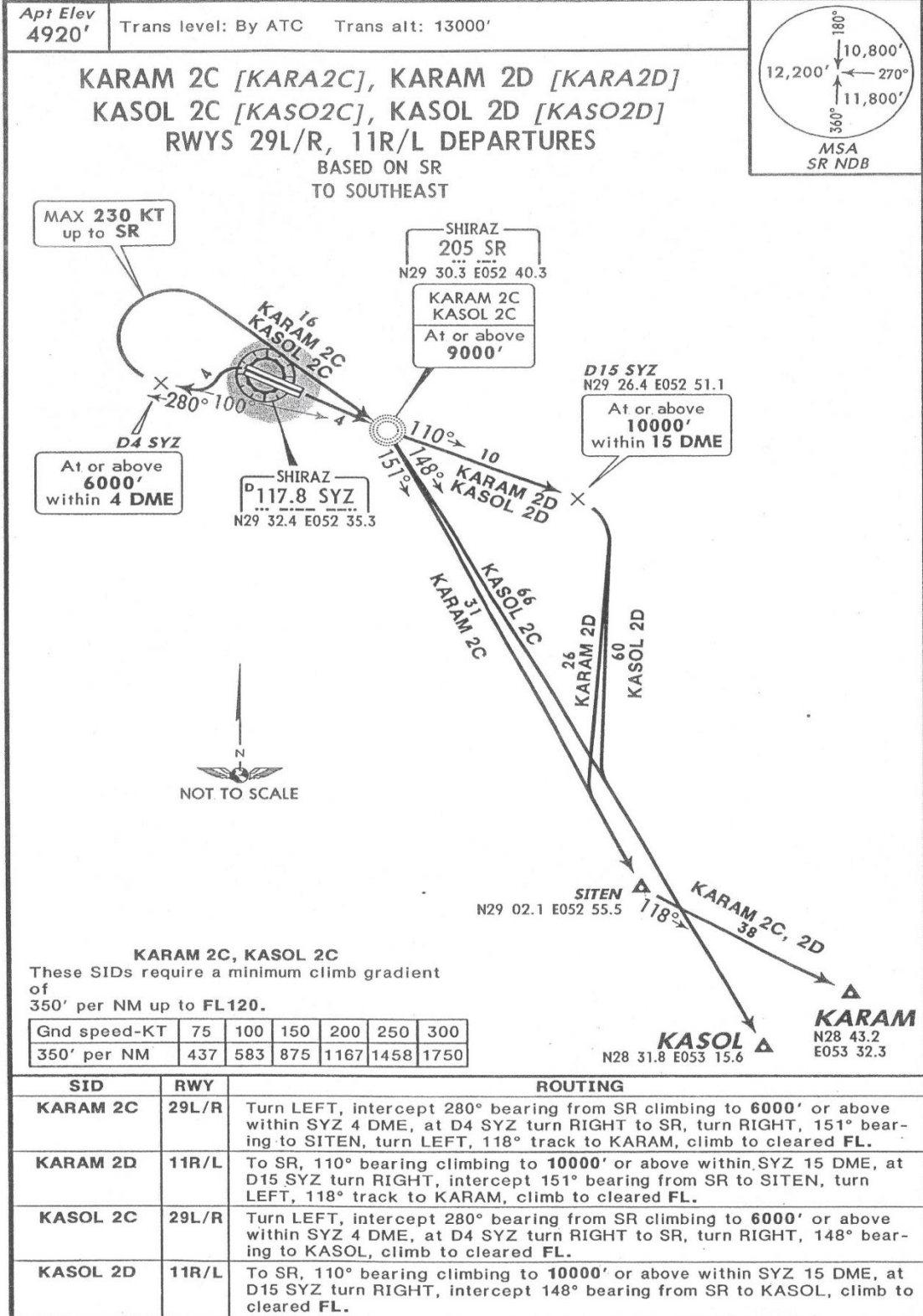
RADAR MINIMUM ALTITUDES

*SHIRAZ Radar
 119.0 125.4 131.4

Apt Elev
 4920'

Alt Set: hPa
 Trans level: By ATC
 Trans alt: 13000'



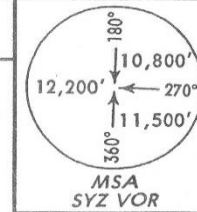


CHANGES: Trans altitude raised.

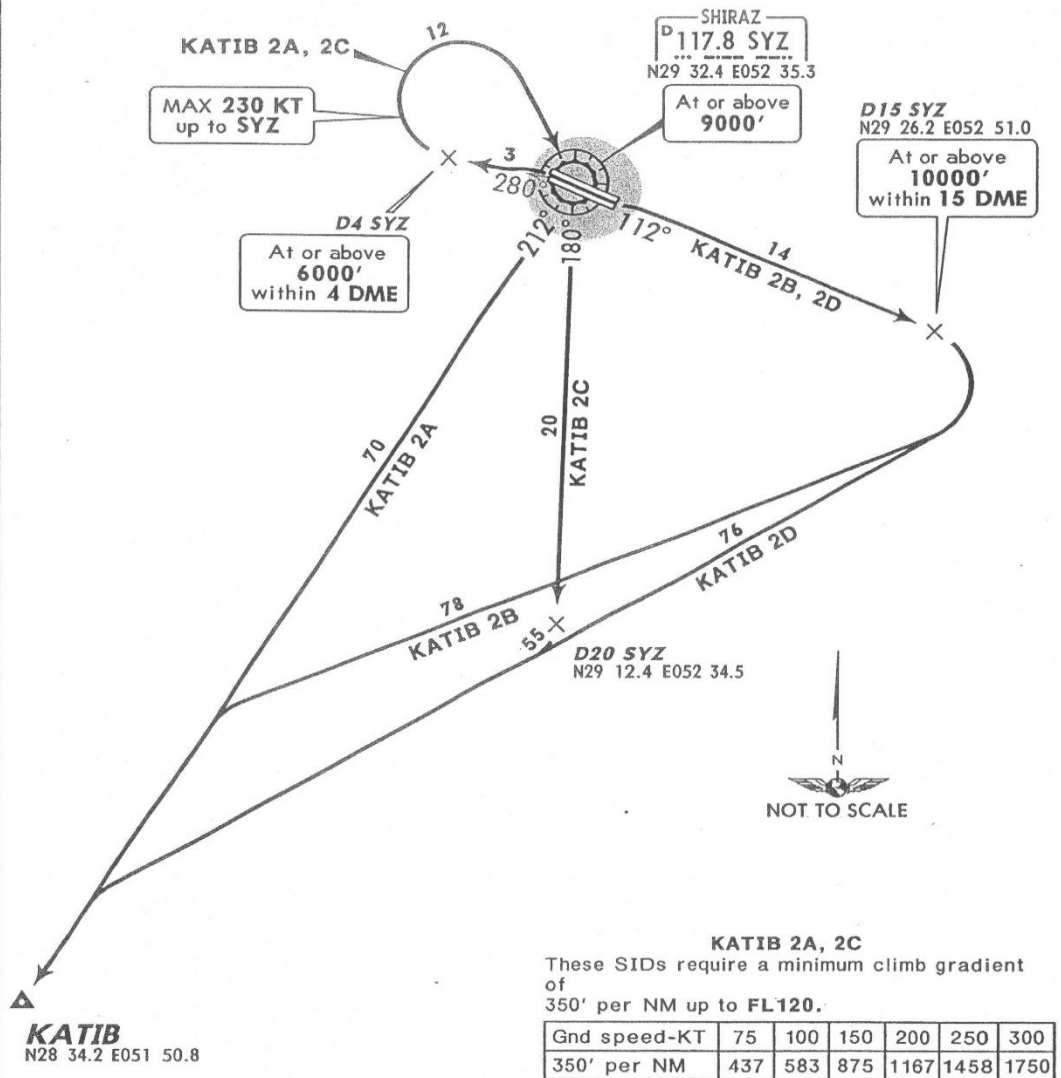
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Apr Elev
 4920'

Trans level: By ATC Trans alt: 13000'



KATIB 2A [KATI2A], KATIB 2B [KATI2B]
 KATIB 2C [KATI2C], KATIB 2D [KATI2D]
 RWYS 29L/R, 11R/L DEPARTURES
 BASED ON SYZ
 TO SOUTHSOUTHWEST



KATIB
 N28 34.2 E051 50.8

KATIB 2A, 2C
 These SIDs require a minimum climb gradient of 350' per NM up to FL120.

Gnd speed-KT	75	100	150	200	250	300
350' per NM	437	583	875	1167	1458	1750

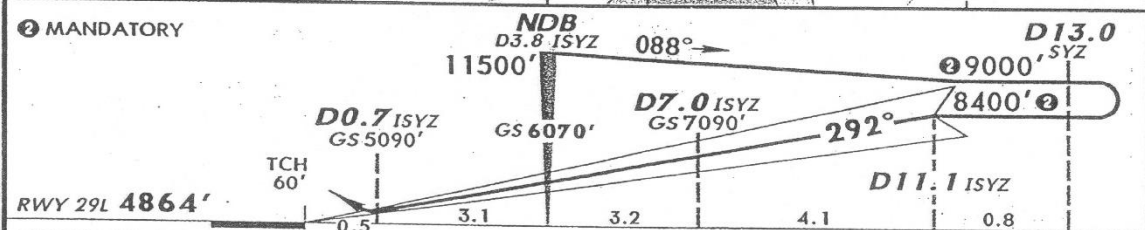
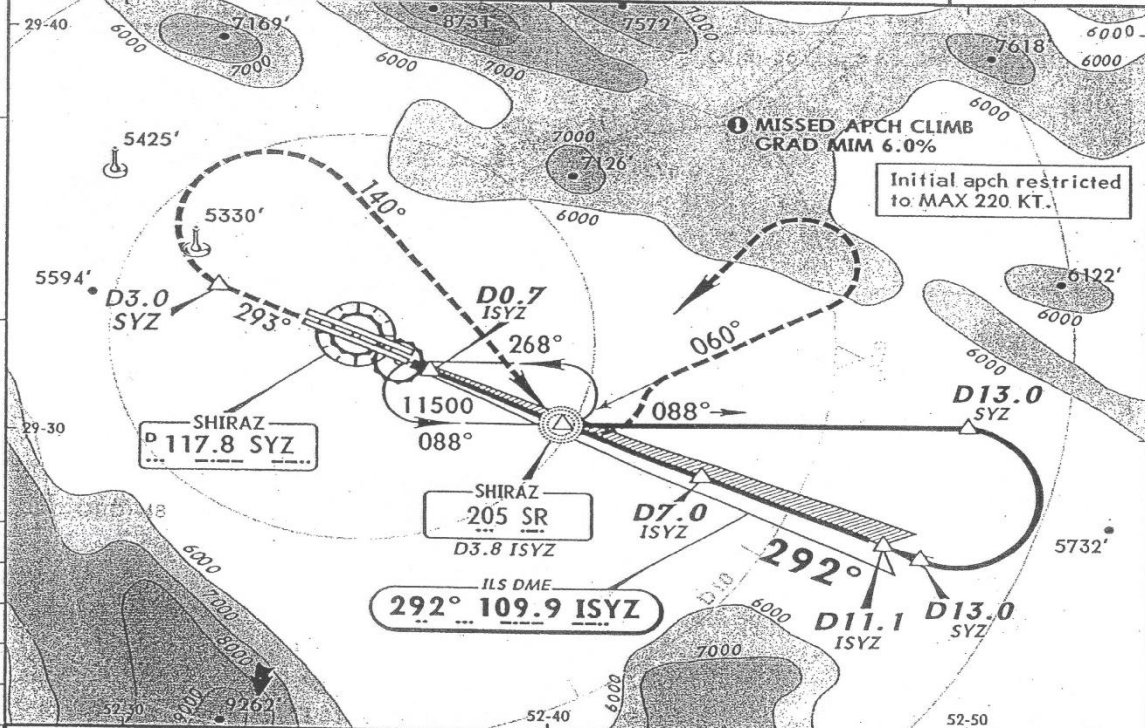
SID	RWY	ROUTING
KATIB 2A	29L/R	Turn LEFT, intercept SYZ R-280 climbing to 6000' or above within SYZ 4 DME, at D4 SYZ turn RIGHT to SYZ, turn RIGHT, SYZ R-212 to KATIB, climb to cleared FL.
KATIB 2B	11R/L	Intercept SYZ R-112 climbing to 10000' or above within SYZ 15 DME, at D15 SYZ turn RIGHT, intercept SYZ R-212 to KATIB, climb to cleared FL.
KATIB 2C	29L/R	Turn LEFT, intercept SYZ R-280 climbing to 6000' or above within SYZ 4 DME, at D4 SYZ turn RIGHT to SYZ, turn RIGHT, SYZ R-180, at D20 SYZ turn RIGHT, intercept SYZ R-212 to KATIB, climb to cleared FL.
KATIB 2D	11R/L	Intercept SYZ R-112 climbing to 10000' or above within SYZ 15 DME, at D15 SYZ turn RIGHT, pass SYZ R-180 beyond SYZ 20 DME, intercept SYZ R-212 to KATIB, climb to cleared FL.

CHANGES: Trans altitude raised.

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OISS/SYZ **A** **JEPPESSEN** SHIRAZ, IRAN
 SHAHID DASTGHAIB INTL 25 AUG 06 **11-5** NDB DME ILS-2 Rwy 29L

ATTIS 127.0		SHIRAZ Approach (R) 119.0 125.4 131.4 134.1				SHIRAZ Tower 118.1 121.9	
LOC ISYZ 109.9	Final Apch Crs 292°	GS NDB 6070' (1206')	ILS DA(H) 5090' (226')	Apt Elev 4920' RWY 4864'			
MISSED APCH: Climb on 293° from NDB to 7000' within D3.0 SYZ, then climbing turn RIGHT onto 140° to NDB. After passing NDB turn LEFT and climb onto 060° to 10000', then turn LEFT to rejoin holding at 11500'.							180° 10,800' 270° 11,800' 360° 12,200'
Alt Set: hPa		Rwy Elev: 166 hPa		Trans level: By ATC		Trans alt: 13000'	



Gnd speed-Kts	120	140	160	180	HIALS PAPI-L	7000'	293°	D3.0
	GS 3.00°	646	753	861		968	↑ on	from within

STRAIGHT-IN LANDING RWY 29L Missed apch climb gradient mim 6.0%				CIRCLE-TO-LAND			
ILS DA(H) 5087' (223')				Not authorized North of airport			
FULL		ALS out		Max Kts		MDA(H)	
800m		1200m		180		6380' (1460')	
C		D		205		4800m	

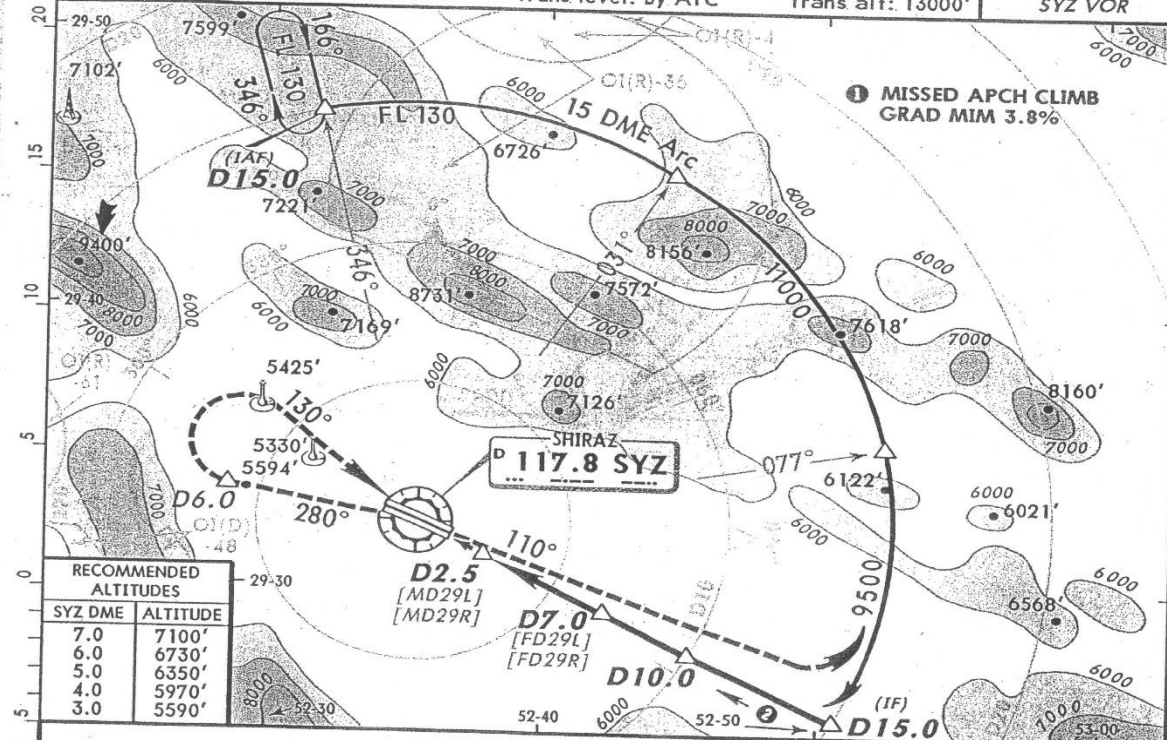
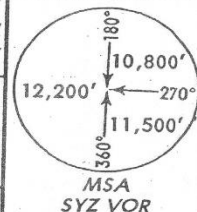
CHANGES: Procedure. Chart reindexed. © JEPPESEN SANDERSON, INC., 2001, 2006. ALL RIGHTS RESERVED

OISS/SYZ
 SHAHID DASTGHAIB INTL

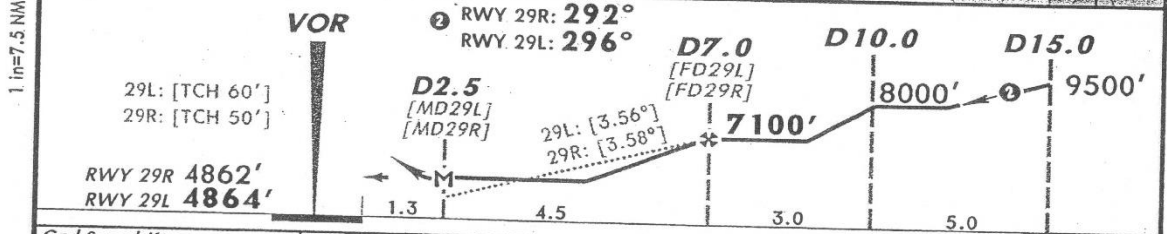
25 AUG 06
 Eff: 31 Aug
 JEPPesen
 (13-1)

SHIRAZ, IRAN
 VOR DME-1 Rwy 29L/R

ATIS 127.0		SHIRAZ Approach (R) 119.0 125.4 131.4 134.1			SHIRAZ Tower 118.1 121.9	
VOR SYZ 117.8	Final Apch Crs RWY 29L 296° RWY 29R 292°	Minimum Alt D7.0 7100' (2236')	MDA(H) Refer to Minimums	Apt Elev 4920' RWY 29L 4864' RWY 29R 4862'		
MISSED APCH: Climb STRAIGHT AHEAD to VOR, then turn LEFT to continue climb on R-280 to 7400' within D6.0. Turn RIGHT and proceed on 130° to overhead VOR, then proceed on R-110. Turn LEFT to maintain 15 DME Arc to rejoin holding at FL 130. MAX 185 KT until overhead VOR.						
Alt Set: hPa		Rwy Elev: 166 hPa		Trans level: By ATC		Trans alt: 13000'



SYZ DME	ALTITUDE
7.0	7100'
6.0	6730'
5.0	6350'
4.0	5970'
3.0	5590'



Gnd Speed-Kts	120	140	160	180
29L: Descent angle [3.56°]	756	882	1008	1134
29R: Descent angle [3.58°]	760	887	1014	1140

HIALS PAPI-L
 185 KT MAX
 SYZ 117.8

STRAIGHT-IN LANDING RWY 29L/R
 Missed apch climb gradient mim 3.8%
 MDA(H) RWY 29L: 5510' (646')
 RWY 29R: 5510' (648')

CIRCLE-TO-LAND
 Not authorized North of airport

	ALS out	Max Kts	MDA(H)
C	2000m	180	6380' (1460') 4800m
D	2400m	205	

CHANGES: None.

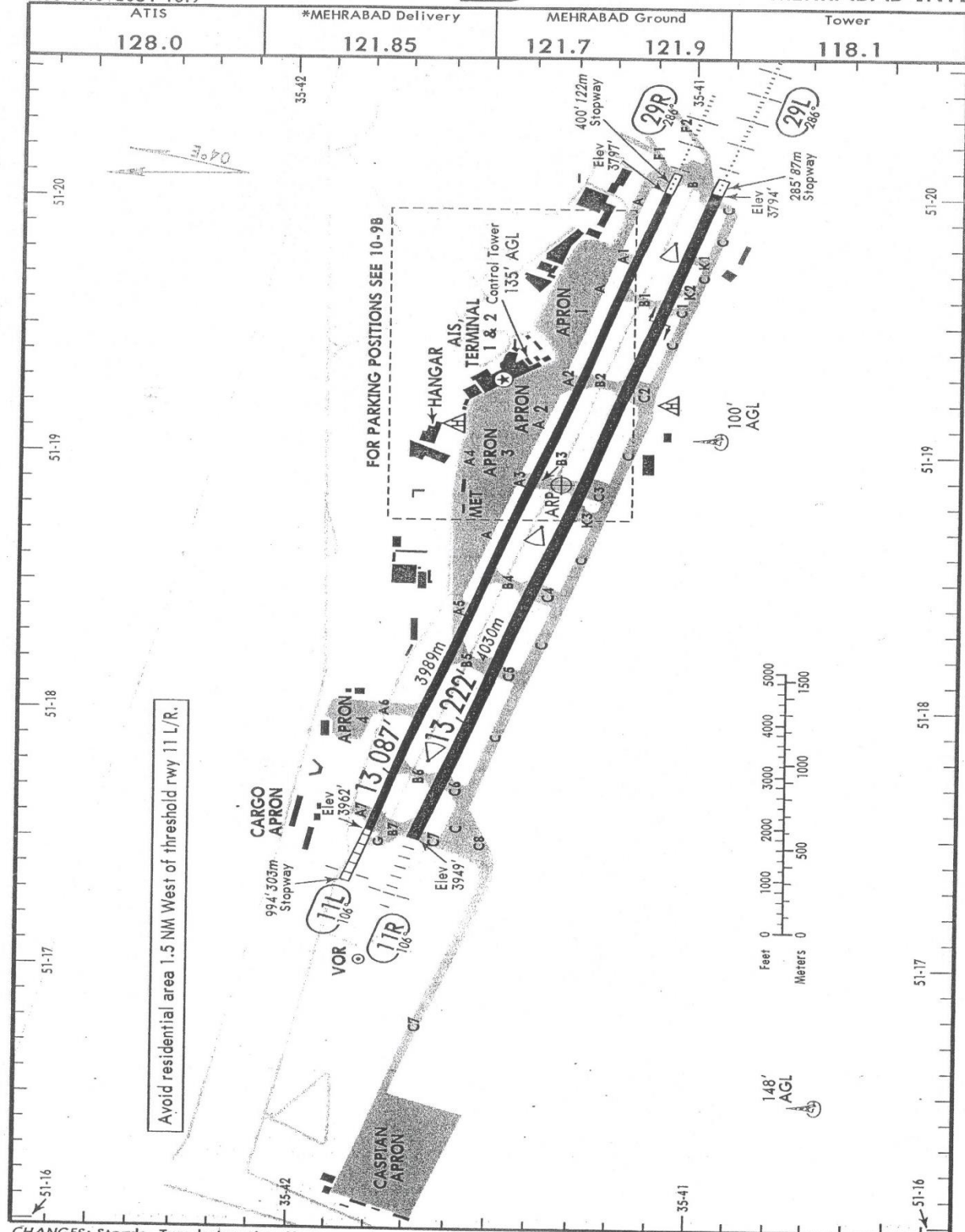
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OIII/THR
 Apt Elev 3962'
 N35 41.3 E051 18.9



JEPPESEN
 31 JUL 09 10-9

TEHRAN, IRAN
 MEHRABAD INTL



CHANGES: Stands, Twy designation, New apron 4.

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INS COORDINATES			
STAND No.	COORDINATES	STAND No.	COORDINATES
1, 2	N35 41.5 E051 19.0	23	N35 41.3 E051 19.7
3	N35 41.5 E051 19.1	24	N35 41.3 E051 19.6
4, 5	N35 41.5 E051 19.0	25	N35 41.3 E051 19.7
6, 7	N35 41.5 E051 19.1	26	N35 41.3 E051 19.6
8, 9	N35 41.5 E051 19.2	27	N35 41.3 E051 19.8
13	N35 41.4 E051 19.3	28	N35 41.3 E051 19.7
14	N35 41.3 E051 19.4	29	N35 41.3 E051 19.8
15	N35 41.4 E051 19.5	30, 32	N35 41.2 E051 19.7
16	N35 41.3 E051 19.5	J1	N35 41.5 E051 19.2
17	N35 41.4 E051 19.6	J2, J3	N35 41.4 E051 19.3
18	N35 41.3 E051 19.5		
19	N35 41.3 E051 19.6		
20	N35 41.3 E051 19.5		
21	N35 41.3 E051 19.7		
22	N35 41.3 E051 19.6		

GENERAL

Birds and stray dogs in vicinity of airport.
RWY 11L/R right-hand circuit.

ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS		TAKE-OFF	WIDTH
		LANDING	BEYOND		
		Threshold	Glide Slope		
11L	HIRL(60m) ALS PAPI-L (angle 3.22°)				148'
29R	HIRL(60m) HIALS PAPI-L (angle 3.22°)			①	45m
11R	HIRL(60m) ALS PAPI-L (angle 3.36°)				197'
29L	HIRL(60m) HIALS SFL PAPI-L (angle 3.30°)	②	12,397' 3779m	②	60m

① MIL jet barrier 100' West of RWY 11L height 12' AGL is in up psn and can be lowered on request.

② Single engine aircraft should use portion of runway West of arrester gear which is installed 2598'/792m inwards from threshold 29L.

TAKE-OFF & DEPARTURE PROCEDURE

AIR CARRIER (JAA)	
All Rwys	
	NIL (DAY only)
RL & RCLM	
C	400m
D	500m

Departure rwy 11 L/R: Rwy 11 not used for T/O during 1730 - 0430 except tail wind component of rwy 29 is 10 KT or more.

Departure rwy 29 L/R: To avoid residential area 1.5 NM West of rwy 11 all JET acft are to make a LEFT turn as soon as practicable after passing end of rwy and follow assigned SID.

CHANGES: Minimums.

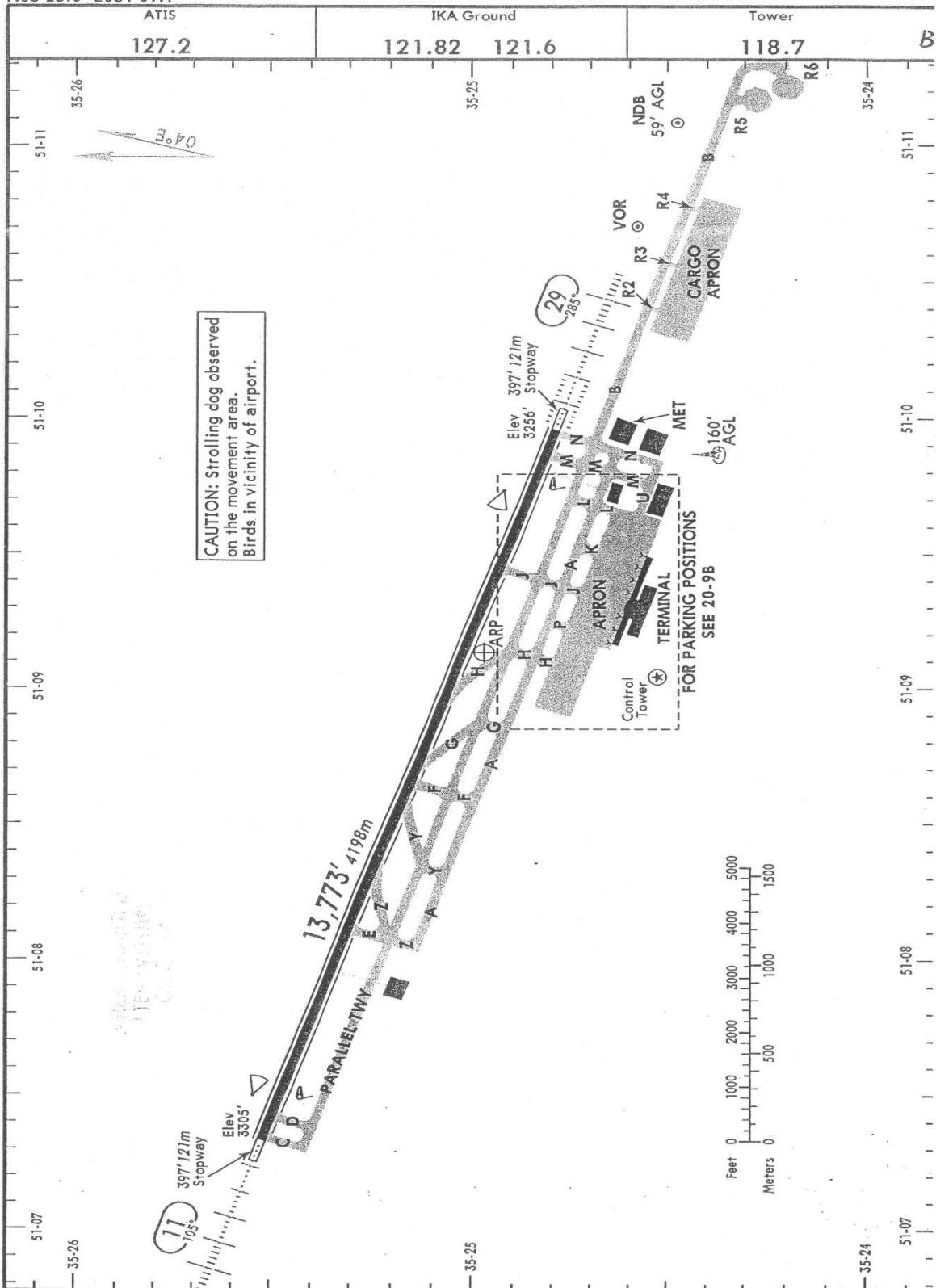
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OIIE/IKA
 Apt Elev 3305'
 N35 25.0 E051 09.1



JEPPESEN
 5 DEC 08 (20-9) Eff 18 Dec

TEHRAN, IRAN
 IMAM KHOMAINI INTL



CAUTION: Strolling dog observed on the movement area. Birds in vicinity of airport.

FOR PARKING POSITIONS SEE 20-9B

CHANGES: None.

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RWY	ADDITIONAL RUNWAY INFORMATION					USABLE LENGTHS		TAKE-OFF	WIDTH
	LANDING BEYOND					Threshold	Glide Slope		
11	HIRL (60m)	CL (30m)	HIALS	PAPI-L (3.0°)	RVR		12,801'	3902m	148'
29	HIRL (60m)	CL (30m)	HIALS-II	SFL TDZ ①	RVR				45m

① PAPI-L (angle 3.0°).

MINIMUM RUNWAY OCCUPANCY TIME

ARRIVALS:

In order to minimize the occurrence of "go-around", lessen the runway occupancy time and, therefore, get the maximum runway utilization, pilots shall exit the rwy as soon as possible and this will not affect the acft safety and standard operation.

DEPARTURES:

Pilots, when the corresponding clearance is issued, shall be able to taxi to the take-off position in the rwy as soon as the preceding departure acft had began the take-off or the preceding arrival acft had passed their holding position.

Acft shall be able to initiate the take-off immediately after clearance is issued.

Pilots unable to comply with this requirement shall notify to ATC as soon as possible and once in contact with Tower.

Acft not ready to initiate take-off run immediately when cleared for take-off, will have take-off clearance cancelled and will receive instructions to vacate the rwy at the first available twy.

TAKE-OFF		
AIR CARRIER (JAA) All Rwys		
LVP must be in force		NIL (DAY only)
RL & CL & RCLM	RL & RCLM	
C	300m	400m
D		500m

CHANGES: Usable lengths.

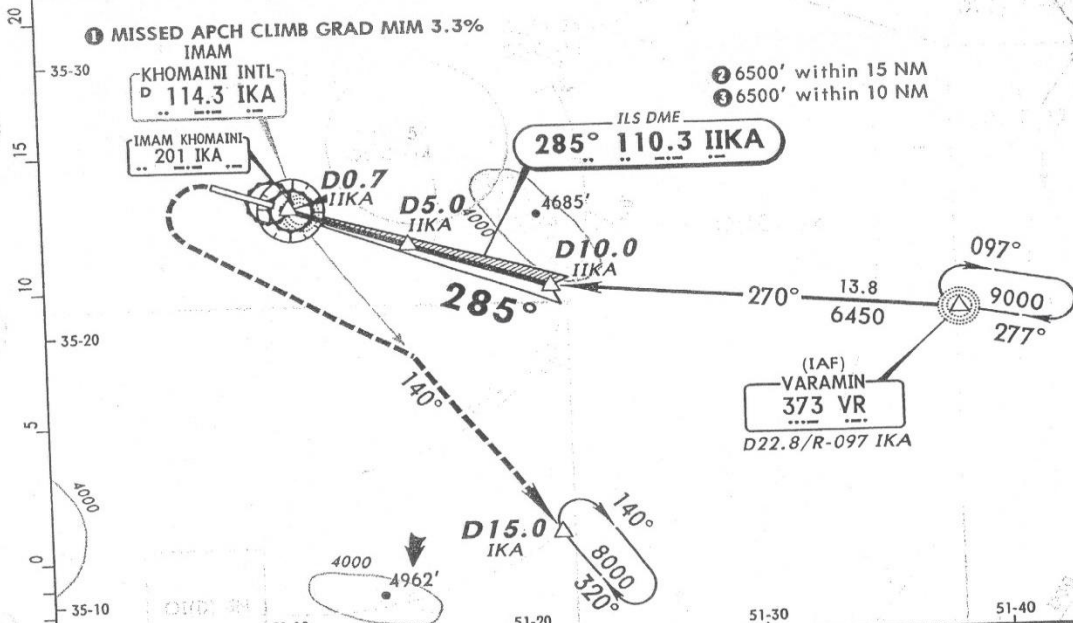
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OIIIE/IKA
IMAM KHOMAINI INTL

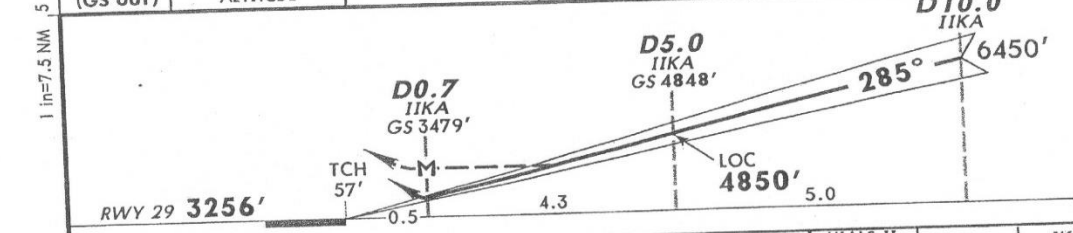
20 MAR 09 (21-1)

VOR DME ILS-1 Rwy 29

ATIS 127.2		MEHRABAD Approach (R) 119.7 125.1 124.45		IKA Tower 118.7		Ground 121.82 121.6	
LOC IKA 110.3	Final Apch Crs 285°	GS D5.0 IKA 4848' (1592')	ILS DA(H) 3479' (223')	Apt Elev 3305' RWY 3256'			
MISSED APCH: Climb on R-285 to 4300', then turn LEFT to intercept R-140 to join D15.0 IKA holding at 8000'.							
Alt Set: hPa		Rwy Elev: 114 hPa	Trans level: By ATC		Trans alt: 9000'		
Procedure restricted to MAX 220 KT.							MSA IKA VOR



LOC (GS out)	IKA DME	2.0	3.0	4.0	5.0
	ALTITUDE	3880'	4200'	4510'	4850'



Gnd speed-Kts	120	140	160	180		4300' IKA on 114.3 R-285
ILS GS 3.00° or LOC Desc Grad 5.2%	646	753	861	968		
MAP at D0.7 IKA						

STRAIGHT-IN LANDING RWY 29 Missed apch climb gradient mim 3.3%						CIRCLE-TO-LAND	
ILS DA(H) 3479' (223')			LOC (GS out) MDA(H) 3690' (434')			Max Kts	MDA(H)
FULL	TDZ or CL out	ALS out					
C	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m	2000m	180	3900' (595')	2400m
D			RVR 1500m VIS 1600m	2400m	205	4010' (705')	3600m

CHANGES: Minimums.

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OIIE/IKA
IMAM KHOMAINI INTL

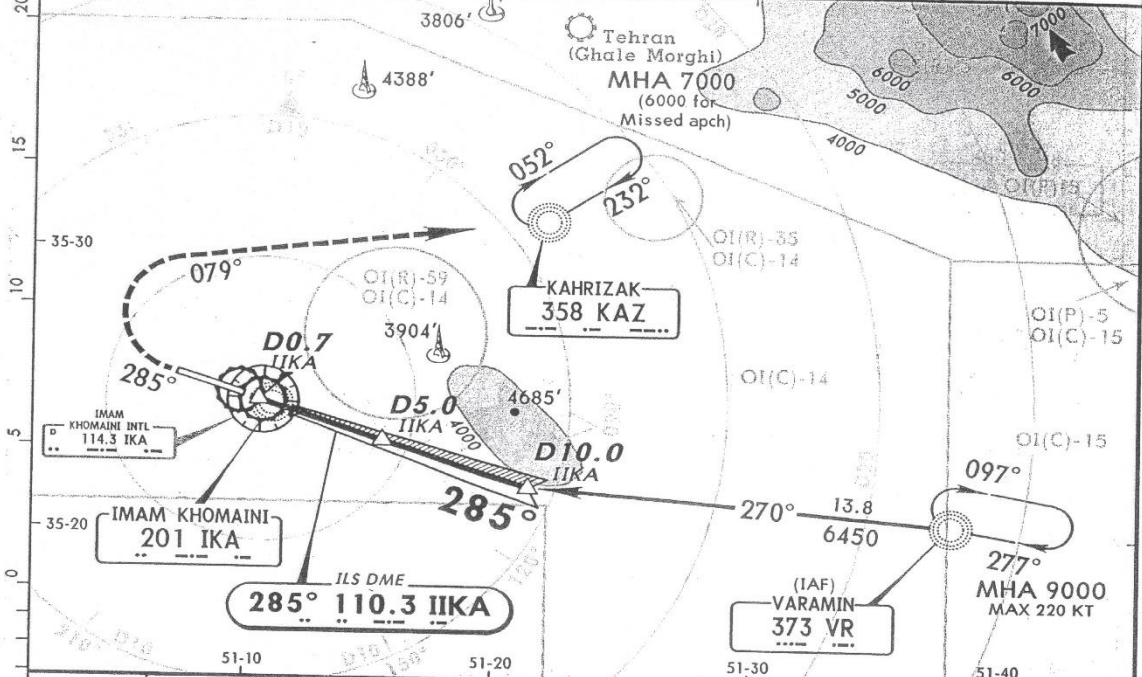


20 MAR 09 **(21-7)**

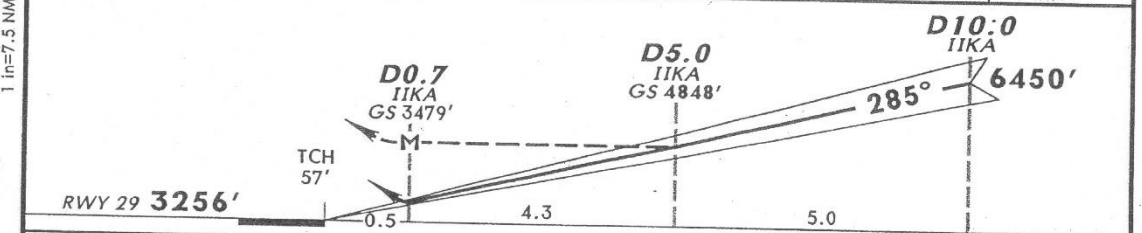
MISSED APCH CLIMB
GRAD MIM 3.3%

TEHRAN, IRAN
NDB ILS-1 Rwy 29

ATIS 127.2		MEHRABAD Approach (R) 119.7 125.1 124.45		IKA Tower 118.7	Ground 121.82 121.6
LOC IKA 110.3	Final Apch Crs 285°	GS D5.0 IKA 4848' (1592')	ILS DA(H) 3479' (223')	Apt Elev 3305' RWY 3256'	
<p>MISSED APCH: Climb on 285° to 4300', then turn RIGHT onto 079° to KAZ NDB and join holding at 6000'. MAX 185 KT.</p>					
Alt Set: hPa		Rwy Elev: 114 hPa		Trans level: By ATC	
		Trans alt: 9000'		MSA IKA NDB	



LOC (GS out)	IKA DME	5.0	6.0	7.0	8.0	9.0	10.0
	ALTITUDE	4850'	5180'	5500'	5820'	6140'	6450'



Gnd speed-Kts	120	140	160	180		185 KT MAX	4300' ↑ on 285°
ILS GS 3.00° or LOC Desc Grad 5.2%	646	753	861	968			

STRAIGHT-IN LANDING RWY 29 Missed apch climb gradient mim 3.3%					CIRCLE-TO-LAND <input checked="" type="checkbox"/>	
ILS DA(H) 3479' (223')			LOC (GS out) MDA(H) 4840' (1584')		Max Kts	MDA(H)
FULL	TDZ or CL out	ALS out	ALS out	ALS out		
C	RVR 550m VIS 800m	RVR 720m VIS 800m	1200m	4000m	180	4840' (1584') 4800m
D				4800m	205	

□ Circling height based on rwy 29 threshold of 3256'

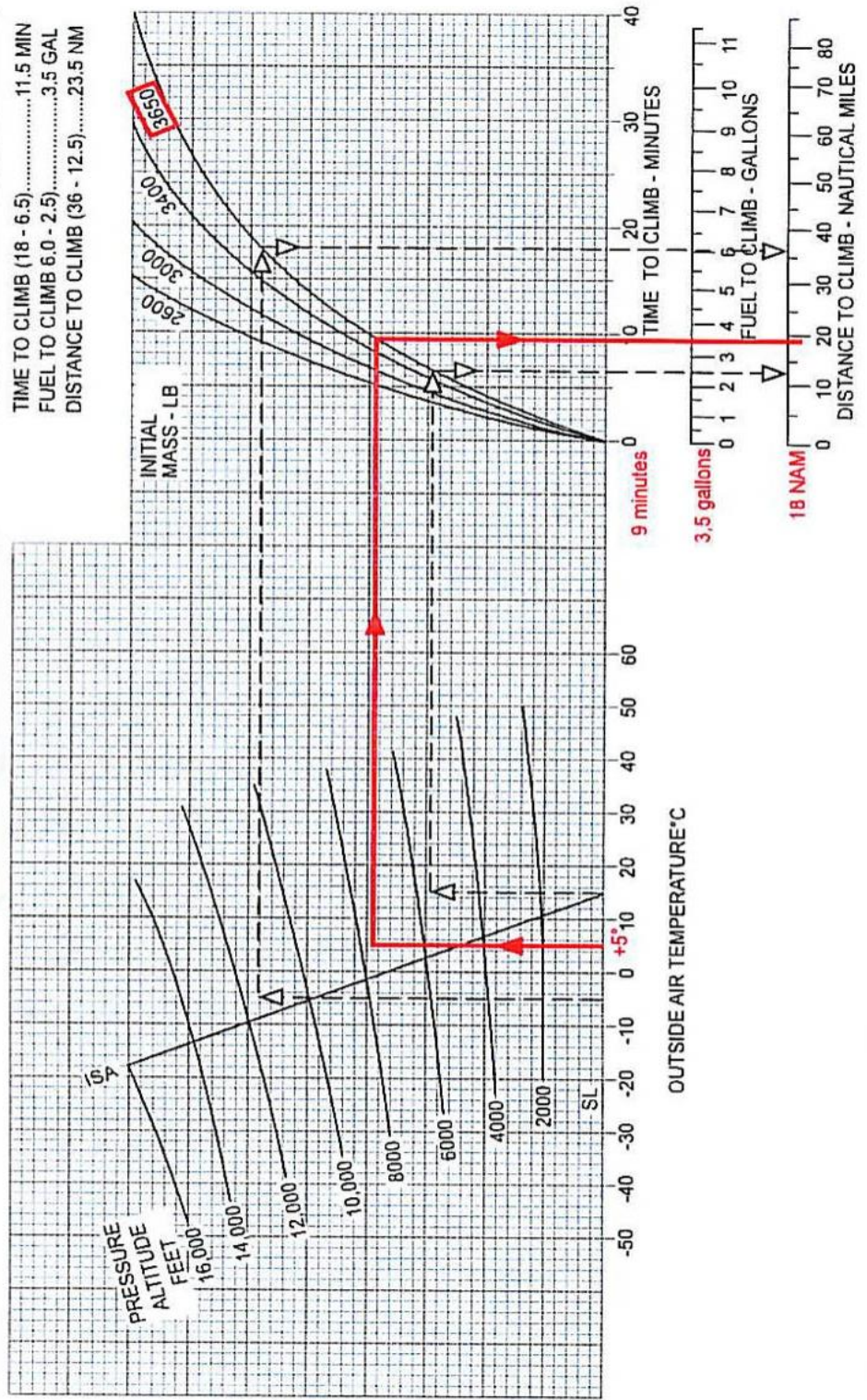
FIGURE F-01

EXAMPLE:
 OAT AT TAKE-OFF 15°C
 OAT AT CRUISE -5°C
 AIRPORT PRESSURE ALTITUDE 5653 FT
 CRUISE PRESSURE ALTITUDE 11,500 FT
 INITIAL CLIMB MASS 3650 LB

TIME TO CLIMB (18 - 6.5) 11.5 MIN
 FUEL TO CLIMB (6.0 - 2.5) 3.5 GAL
 DISTANCE TO CLIMB (36 - 12.5) 23.5 NM

ASSOCIATED CONDITIONS:
 POWER FULL THROTTLE, 2500 RPM
 FUEL DENSITY 6.0 LB/GALL
 MIXTURE FULL RICH
 COWL FLAPS AS REQUIRED

CLIMB SPEED 110 KT ALL WEIGHTS



Time, Fuel and Distance to Climb

FIGURE F-02

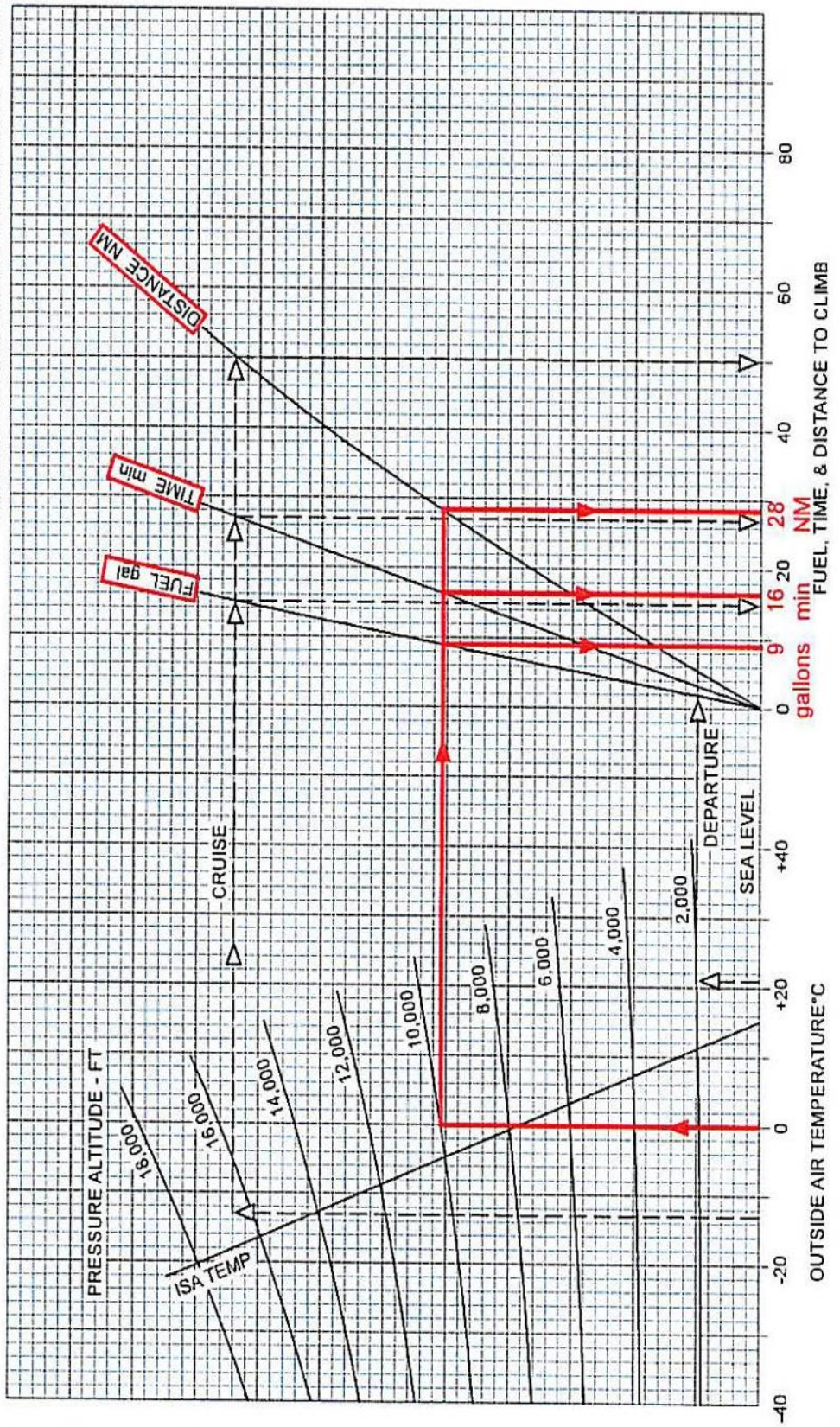
ASSOCIATED CONDITIONS:

4750 LB GEAR UP
 COWL FLAPS CLOSED
 2600 RPM & 33 IN. HG. or FULL THROTTLE
 MIXTURE FULL RICH

CLIMB SPEED 120 kt IAS

EXAMPLE:

DEPARTURE AIRPORT ALTITUDE.....2000 ft
 DEPARTURE AIRPORT OAT.....21°C
 CRUISE ALTITUDE.....16,500 ft
 CRUISE OAT.....-13°C
 FUEL TO CLIMB.....15 - 2 = 13 gal
 TIME TO CLIMB.....27 - 3 = 24 min
 DISTANCE TO CLIMB.....50 - 5 = 45 NM



Climb

FIGURE F-03

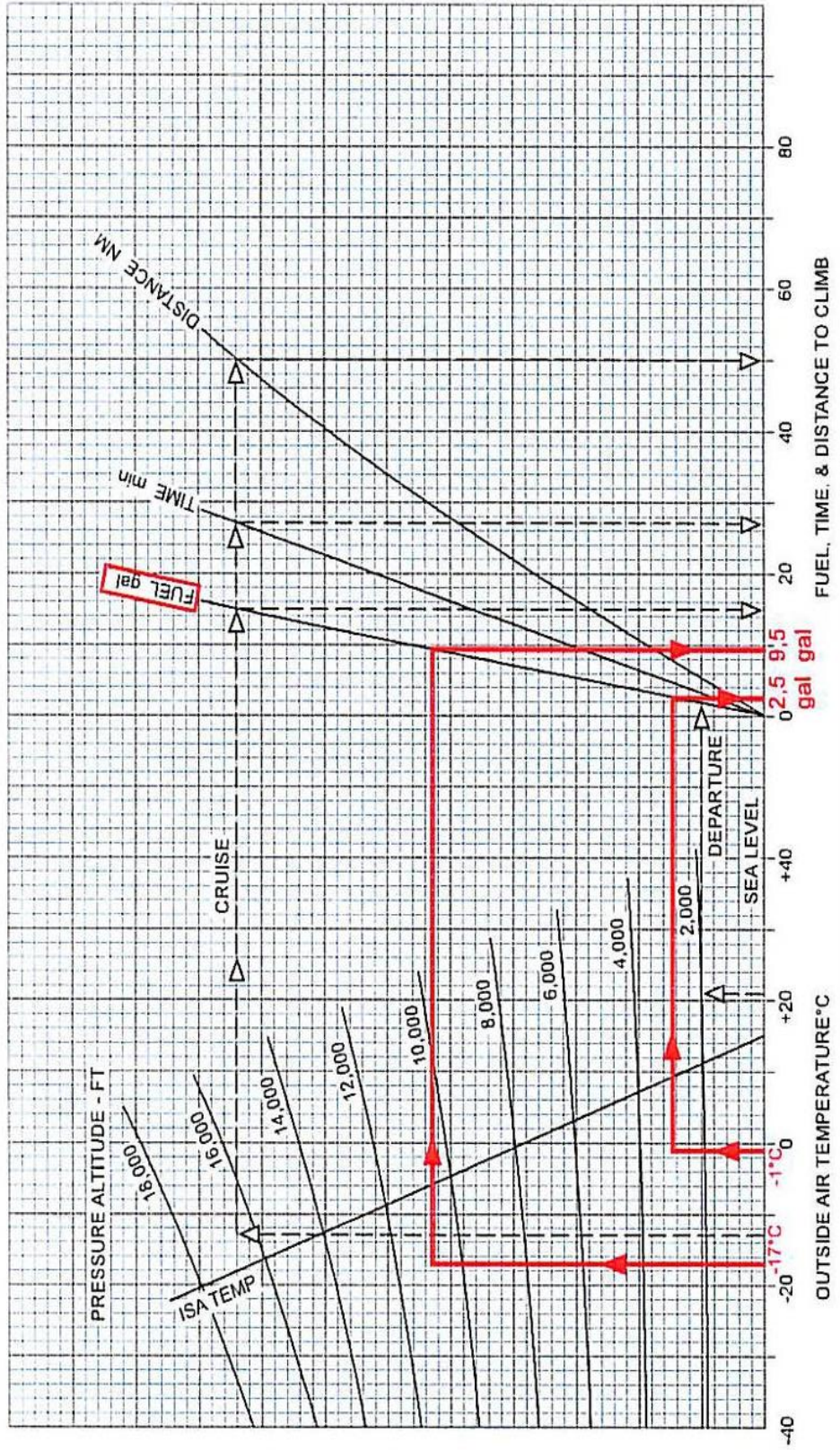
ASSOCIATED CONDITIONS:

4750 LB GEAR UP
 COWL FLAPS CLOSED
 2600 RPM & 33 IN. HG. or FULL THROTTLE
 MIXTURE FULL RICH

CLIMB SPEED 120 kt IAS

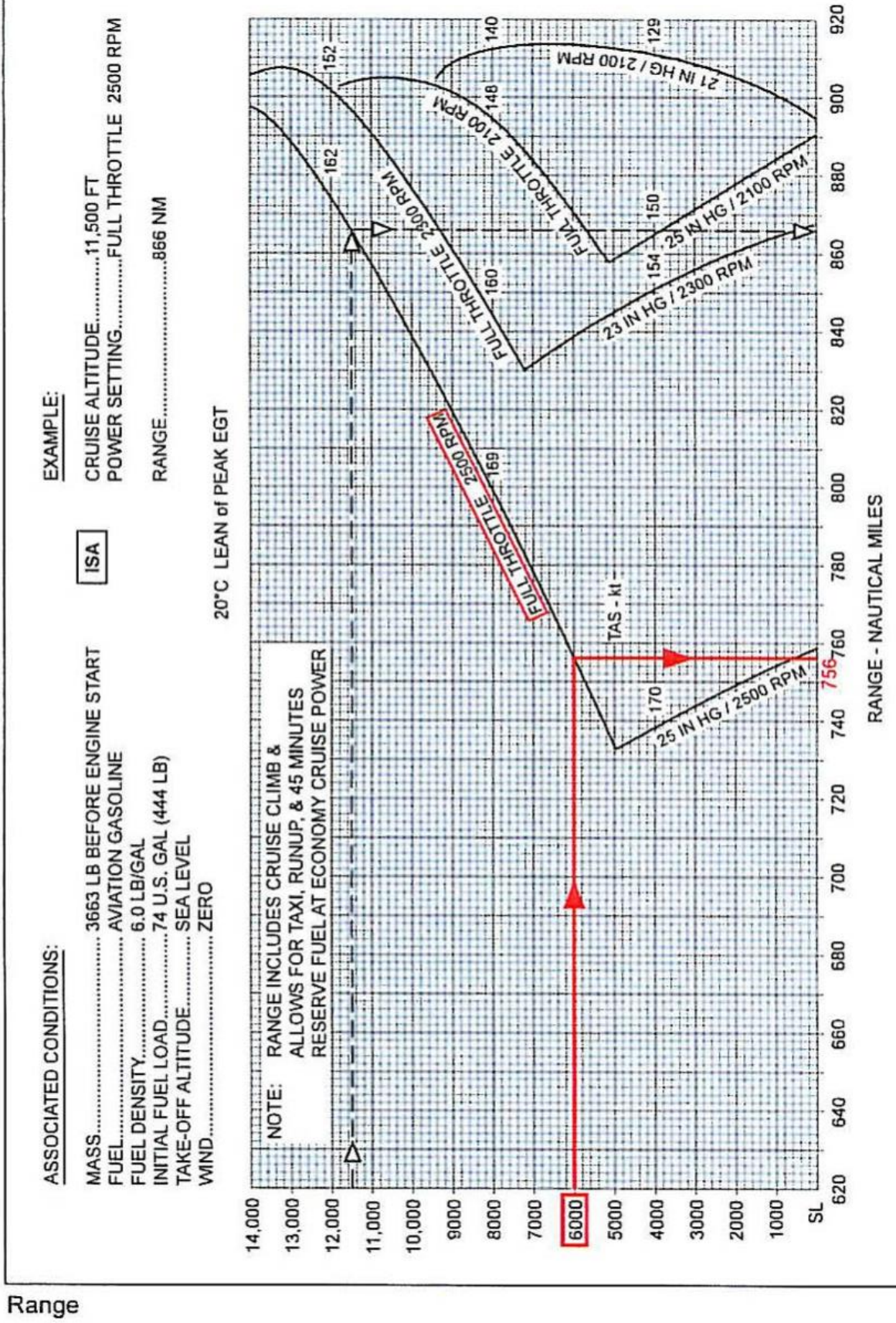
EXAMPLE:

DEPARTURE AIRPORT ALTITUDE.....2000 ft
 DEPARTURE AIRPORT OAT.....21°C
 CRUISE ALTITUDE.....16,500 ft
 CRUISE OAT.....-13°C
 FUEL TO CLIMB.....15 - 2 = 13 gal
 TIME TO CLIMB.....27 - 3 = 24 min
 DISTANCE TO CLIMB.....50 - 5 = 45 NM



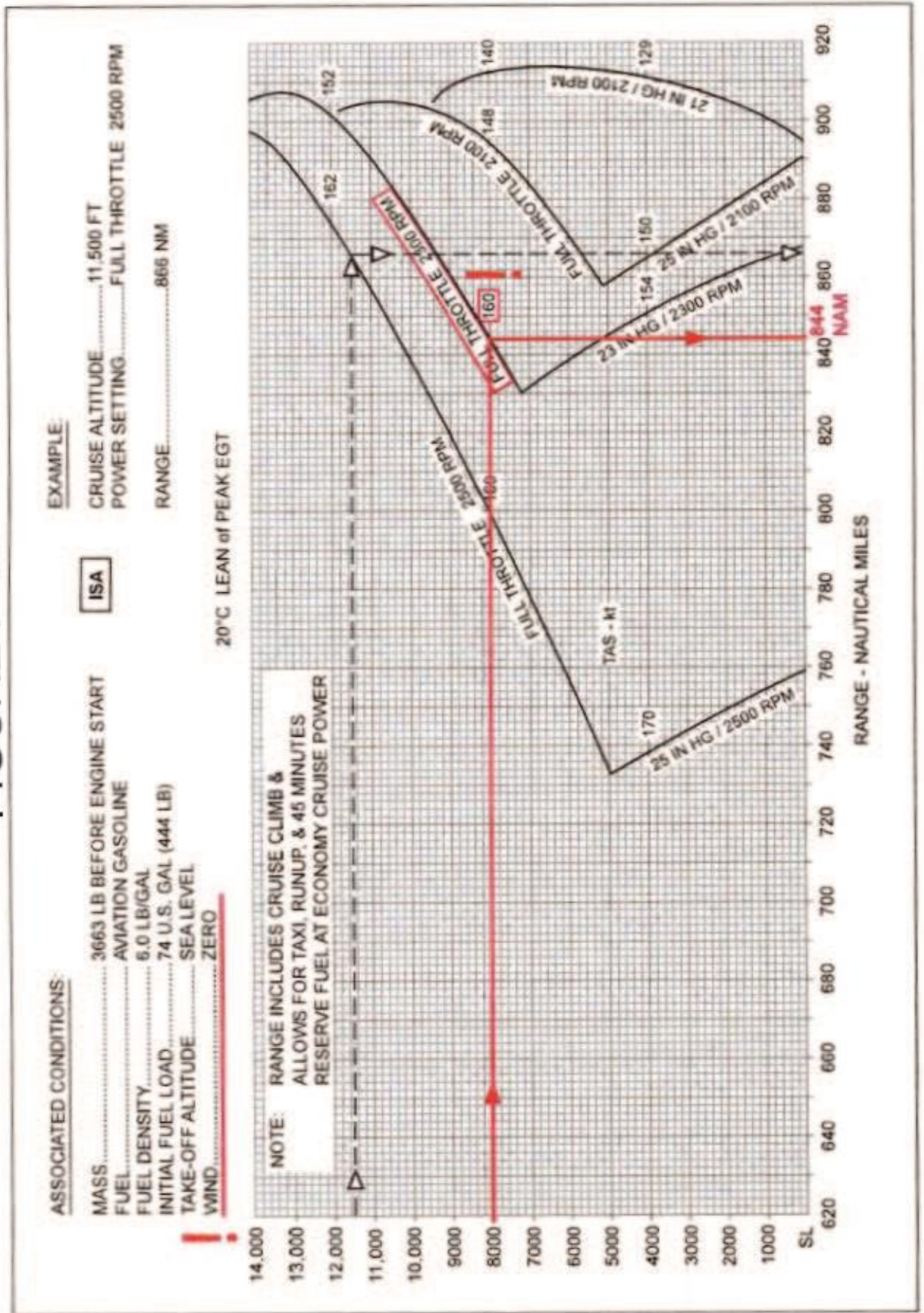
Climb

FIGURE F-04



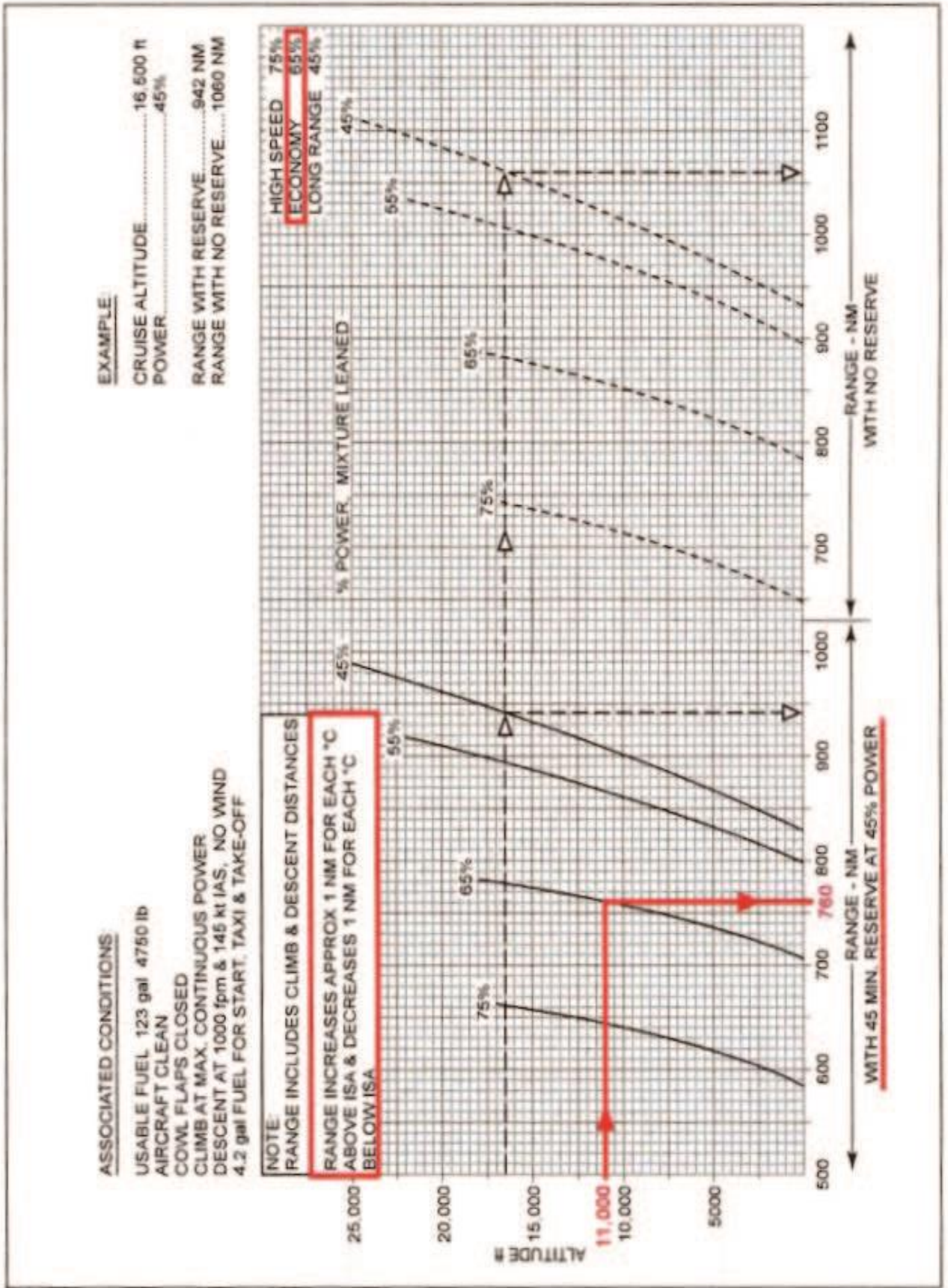
Range

FIGURE F-05



Range

FIGURE F-06



Range

FIGURE F-07

ASSOCIATED CONDITIONS:

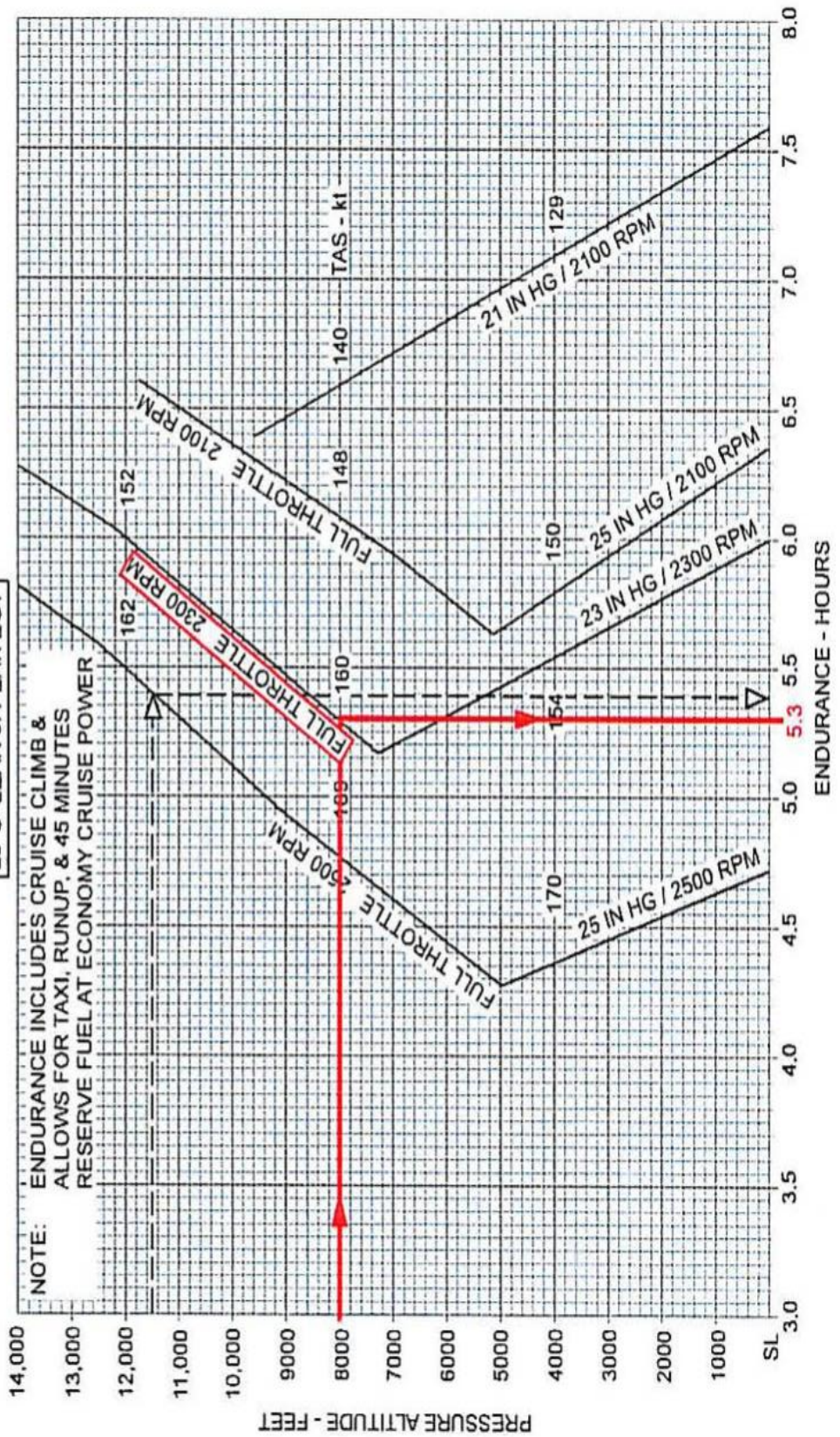
MASS..... 3663 LB BEFORE ENGINE START
 FUEL..... AVIATION GASOLINE
 FUEL DENSITY..... 6.0 LB/GAL
 INITIAL FUEL LOAD..... 74 U.S. GAL (444 LB)
 TAKE-OFF ALTITUDE..... SEA LEVEL
 WIND..... ZERO

ISA

EXAMPLE:

CRUISE ALTITUDE.... 11,500 FT
 POWER SETTING..... FULL THROTTLE 2500 RPM
 ENDURANCE..... 5.4 HRS (5 HRS, 24 MINS)

20°C LEAN of PEAK EGT



Endurance

FIGURE F-08

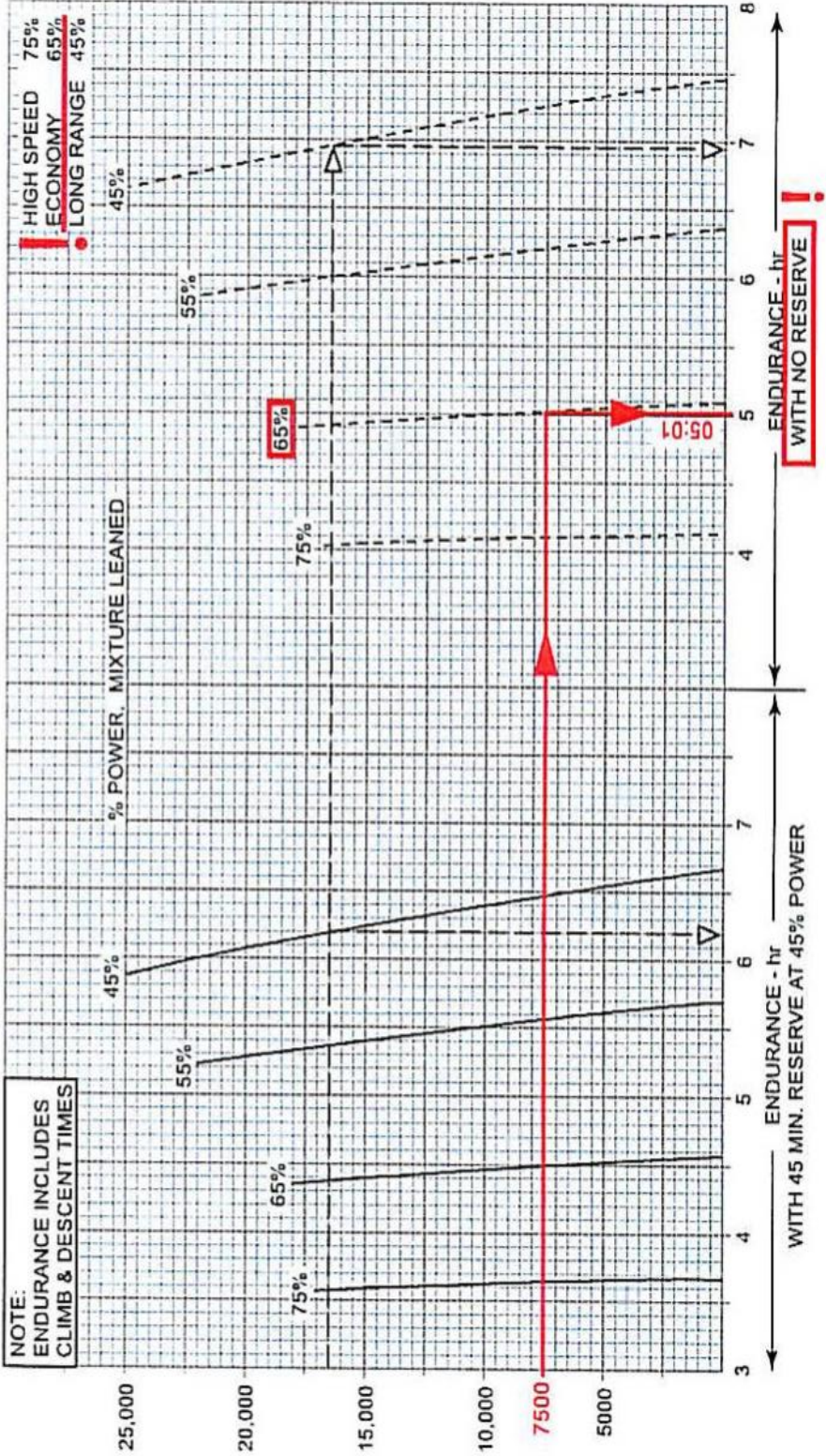
ASSOCIATED CONDITIONS:

USABLE FUEL 123 gal 4750 lb
 AIRCRAFT CLEAN
 COWL FLAPS CLOSED
 CLIMB AT MAX. CONTINUOUS POWER
 DESCENT AT 1000 fpm & 145 kt IAS, NO WIND
 4.2 gal FUEL FOR START, TAXI & TAKE-OFF

EXAMPLE:

CRUISE ALTITUDE16,500 ft
 POWER45%
 ENDURANCE WITH RESERVE6.2 hr
 ENDURANCE WITH NO RESERVE6.95 hr

NOTE:
 ENDURANCE INCLUDES
 CLIMB & DESCENT TIMES



Endurance

FIGURE F-09

ASSOCIATED CONDITIONS:

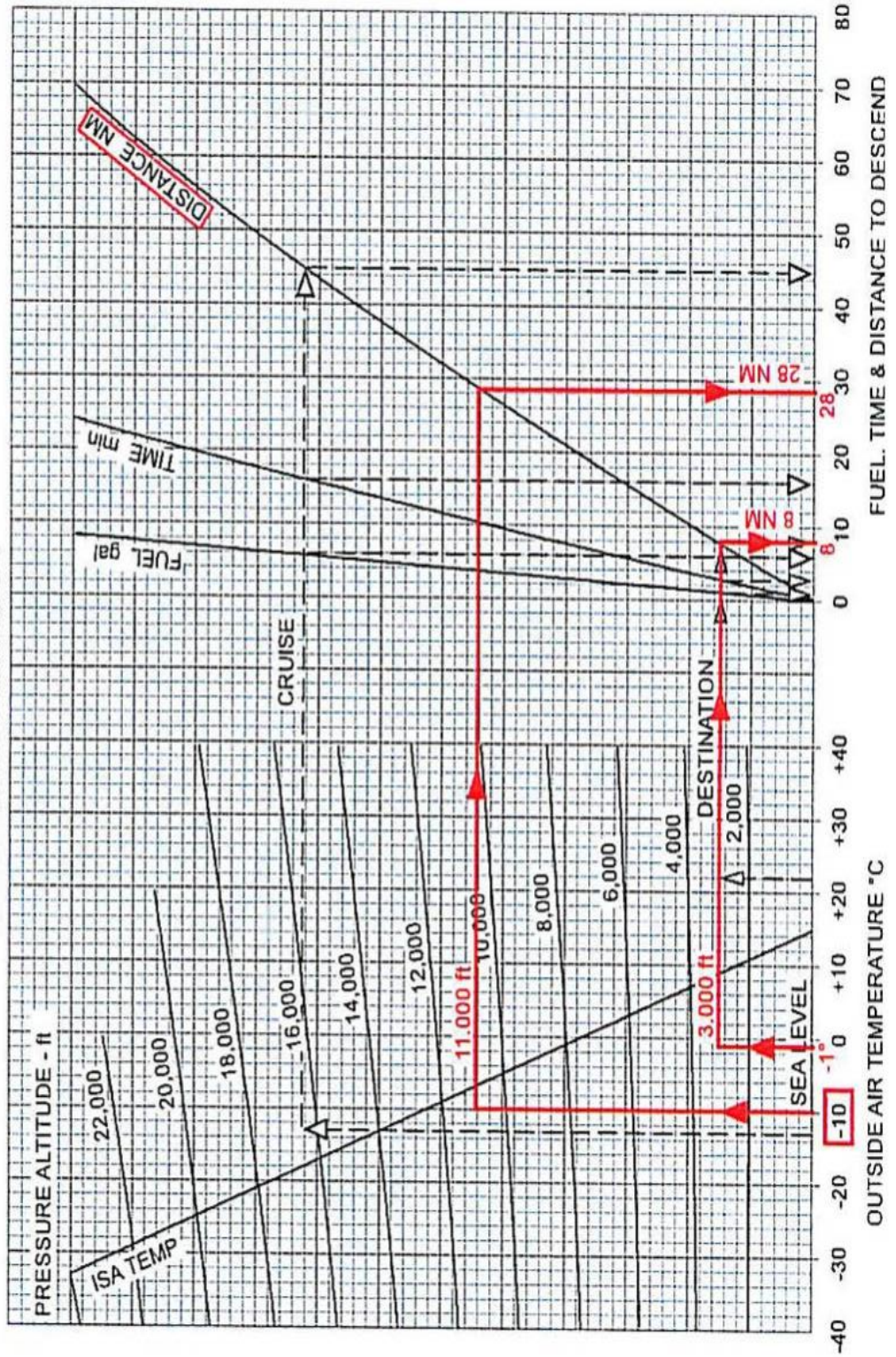
145 kt IAS 1000 FPM DESCENT
 AIRCRAFT CLEAN
 NO WIND

EXAMPLE:

CRUISE ALTITUDE.....16,500 ft
 CRUISE OAT.....-13°C
 DESTINATION ALT.....3000 ft
 DESTINATION OAT.....22°C

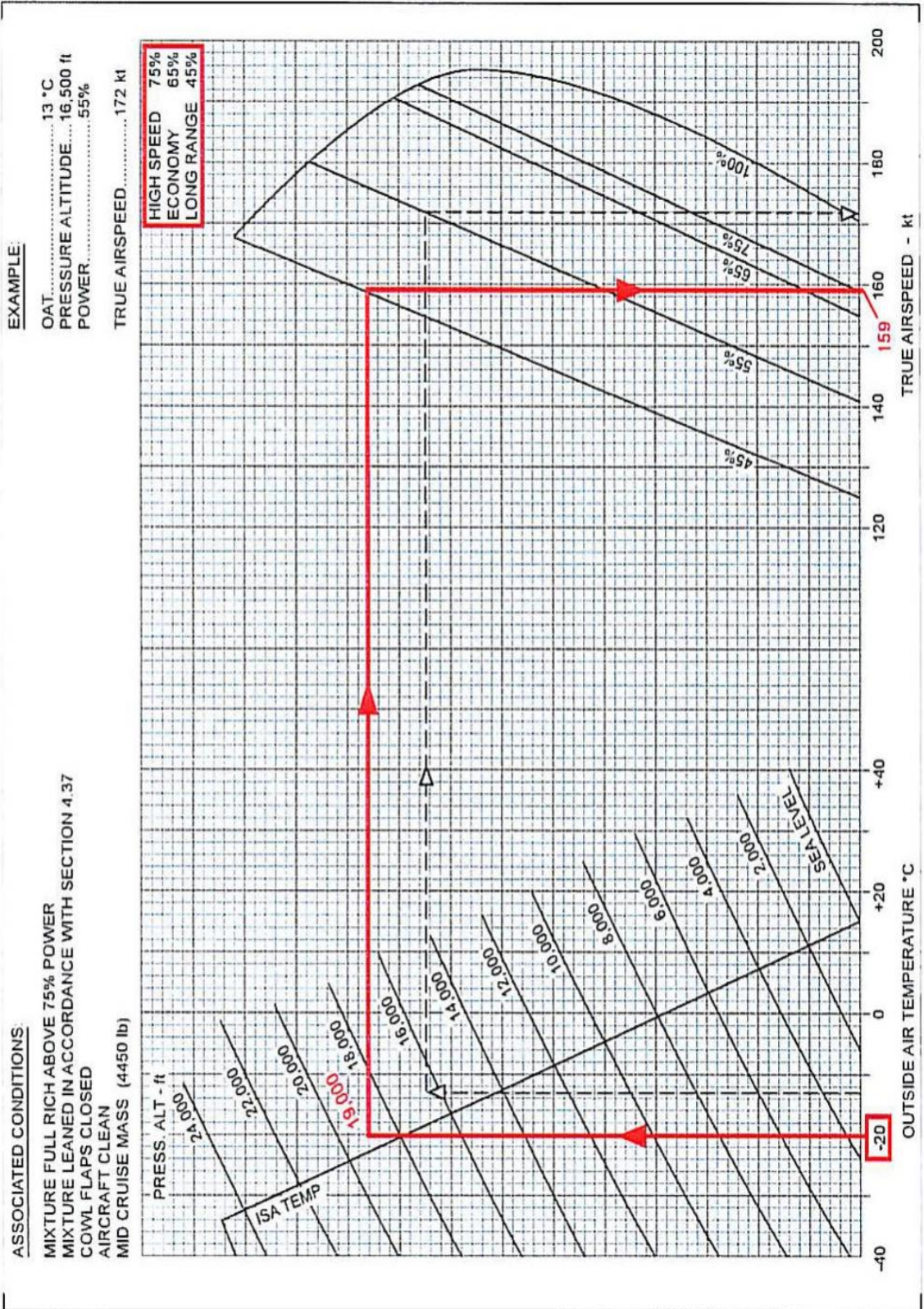
SOLUTION:

FUEL TO DESCEND.....6 - 1 = 5 gal
 TIME TO DESCEND.....16 - 3 = 13 min
 DISTANCE TO DESCEND.....45 - 8 = 37 NM



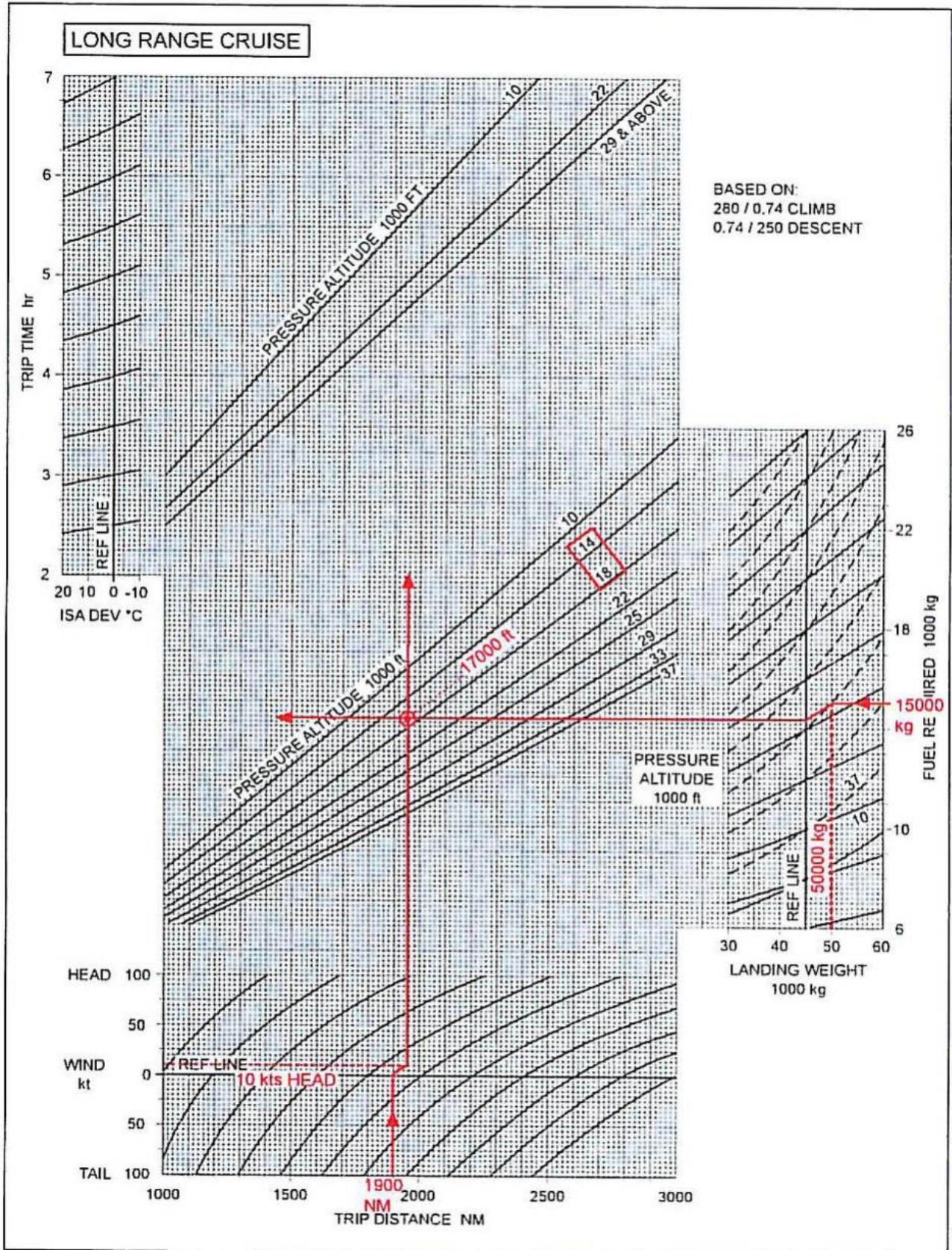
Fuel, Time and Distance to Descend

FIGURE F-10



Speed v Power

FIGURE F-11



Simplified Flight Planning – Trip Distances 1,000 NM to 3,000 NM

FIGURE F-12

Table 2.2.2
Off-peak EGT

25.0 in. Hg (or full throttle) @ 2,100 rpm
Cruise lean mixture @ cruise weight 3,400 lb

ISA Dev. °C	Press. Alt. Feet	IOAT		Man. Press. In. Hg	Fuel Flow		Airspeed	
		°C	°F		PPH	GPH	KIAS	KTAS
-20	0	-3	26	25.0	63.8	10.6	148	140
	2,000	-7	19	25.0	66.4	11.1	149	145
	4,000	-11	12	25.0	68.9	11.5	149	150
	6,000	-15	5	24.3	68.3	11.4	147	152
	8,000	-19	-2	22.5	63.9	10.7	139	148
	10,000	-23	-9	20.8	60.1	10.0	132	144
0	12,000	-27	-17	19.3	56.7	9.5	123	139
	14,000	-31	-24	17.9	54.5	9.1	113	132
	16,000	-35	-32	16.5	52.2	8.7	95	114
	0	17	62	25.0	61.9	10.3	143	140
	2,000	13	55	25.0	64.2	10.7	143	145
	4,000	9	48	25.0	66.6	11.1	144	150
+20	6,000	5	41	24.3	66.1	11.0	141	152
	8,000	1	34	22.5	61.9	10.3	134	148
	10,000	-3	27	20.8	58.5	9.8	126	143
	12,000	-7	19	19.3	55.6	9.3	116	136
	14,000	-11	12	17.9	53.5	8.9	103	125
	16,000	-	-	-	-	-	-	-
+20	0	37	98	25.0	60.1	10.0	138	140
	2,000	33	91	25.0	62.1	10.4	138	145
	4,000	29	84	25.0	64.4	10.7	139	150
	6,000	25	77	24.3	63.9	10.7	136	151
	8,000	21	70	22.5	60.2	10.0	128	147
	10,000	17	63	20.8	56.8	9.5	119	141
+20	12,000	13	55	19.3	54.5	9.1	108	131
	14,000	-	-	-	-	-	-	-
16,000	-	-	-	-	-	-	-	

ISA + 0°
64 pph

ISA + 20°
62.05 pph

ISA + 10°
63 pph

Recommended Cruise Power Settings (continued)

NOTE 1: Full-throttle manifold pressure settings are approximate.

NOTE 2: Shaded areas represent operation with full throttle.

NOTE 3: Fuel flows are to be used for flight planning. Lean using the EGT.

FIGURE F-13

Table 2.2.3

Off-peak EGT

23.0 in. Hg (or full throttle) @ **2,300 rpm**

Cruise lean mixture @ cruise weight 3,400 lb

STANDARD DAY =
= 0° ISA DEVIATION

ISA Dev.	Press. Alt.	IOAT		Man. Press.	Fuel Flow		Airspeed	
		°C	°F		PPH	GPH	KIAS	KTAS
-20	0	-3	26	23.0	67.6	11.3	152	144
	2,000	-7	20	23.0	69.7	11.6	152	149
	4,000	-11	13	23.0	72.1	12.0	153	154
	6,000	-15	6	23.0	74.4	12.4	153	158
	8,000	-18	-1	22.4	73.8	12.3	150	160
	10,000	-23	-9	20.7	68.4	11.4	143	157
	12,000	-27	-16	19.2	63.8	10.6	135	153
	14,000	-31	-23	17.8	60.0	10.0	127	148
	16,000	-35	-31	16.4	56.3	9.4	117	141
0	0	17	62	23.0	65.4	10.9	147	145
	2,000	13	56	23.0	67.4	11.2	147	149
	4,000	9	49	23.0	69.4	11.6	148	154
	6,000	5	42	23.0	71.7	12.0	148	159
	8,000	2	35	22.4	71.1	11.9	145	160
	10,000	-3	27	20.7	66.2	11.0	137	157
	12,000	-7	20	19.2	61.8	10.3	129	152
	14,000	-11	13	17.8	58.5	9.8	120	146
	16,000	-15	5	16.4	55.3	9.2	109	137
+20	0	37	98	23.0	63.2	10.5	142	145
	2,000	33	92	23.0	65.1	10.9	143	149
	4,000	29	85	23.0	67.1	11.2	143	154
	6,000	25	78	23.0	69.0	11.5	142	158
	8,000	22	71	22.4	68.5	11.4	140	160
	10,000	17	63	20.7	64.0	10.7	132	156
	12,000	13	56	19.2	60.0	10.0	123	151
	14,000	9	48	17.8	57.1	9.5	113	142
	16,000	-	-	-	-	-	-	-

Recommended Cruise Power Settings (continued)

NOTE 1: Full-throttle manifold pressure settings are approximate.

NOTE 2: Shaded areas represent operation with full throttle.

NOTE 3: Fuel flows are to be used for flight planning. Lean using the EGT.

FIGURE F-14

	TAS *)	Fuel flow *)	Ground speed (kts)	Time (hrs)	Fuel used (l)
FL50	192	208	162	2,72	565
FL100	201	192	151	2,91	558
FL180	216	163	146	3,02	492

*) Figure must be interpolated from table.

GS = TAS - wind

Time = 440 NM / GS

Fuel = Time * Fuel flow

From table it is evident, that FL180 will offer the lowest fuel economy => best range performance.

FIGURE F-15

Endurance / Fuel Calculation

	Fuel (kg)	Time (hh:mm)
Trip Fuel	5.800	02:32
Contingency Fuel	290	00:07
Alternate Fuel	1.800	00:42
Final Reserve Fuel	1.325	00:30
Minimum T/O Fuel	9.215	
Extra Fuel	585	00:15
Actual T/O Fuel	9.800	
Taxi Fuel	200	
Ramp Fuel	10.000	

FIGURE F-16

POWER		75%		65%			55%						45%						
FUEL FLOW		29.0 GPH		23.3 GPH			18.7 GPH						16.0 GPH						
RPM		2,500	2,600	2,400	2,500	2,600	2,100	2,200	2,300	2,400	2,500	2,600	2,100	2,200	2,300	2,400	2,500	2,600	
PRESS ALT (ft)	ISA 0°C	MANIFOLD ABSOLUTE PRESSURE (Hg in) (MAP)																	
		0	15	34.0	33.0	33.8	32.0	31.0	31.2	30.3	29.4	28.2	27.2	26.3	27.1	26.4	25.5	24.3	23.3
2,000	11	33.8	32.7	33.2	31.7	30.7	30.5	29.7	28.8	27.8	26.8	26.0	26.4	25.8	24.6	23.7	22.8	22.1	
4,000	7	33.6	32.4	32.8	31.5	30.5	30.0	29.2	28.3	27.4	26.4	25.6	25.8	25.0	24.0	23.2	22.3	21.8	
6,000	3	33.4	32.2	32.5	31.2	30.3	29.7	28.8	28.0	27.0	26.2	25.3	25.3	24.5	23.5	22.8	21.9	21.5	
8,000	-1	33.1	32.0	32.3	31.0	30.1	29.4	28.4	27.7	26.8	25.7	25.0	24.8	24.0	23.0	22.4	21.6	21.2	
10,000	-5	33.0	31.9	32.0	30.9	30.0	-	28.3	27.5	26.5	25.5	24.7	24.4	23.7	22.8	22.0	21.4	21.0	
12,000	-9	32.5	31.8	31.8	30.7	29.8	-	28.3	27.2	26.3	25.3	24.6	24.0	23.3	22.5	21.7	21.2	20.9	
14,000	-13	-	31.7	-	30.5	29.7	-	-	27.1	26.1	25.2	24.4	-	23.0	22.3	21.4	21.1	20.8	
16,000	-17	-	31.6	-	30.4	29.5	-	-	-	25.9	25.0	24.3	-	-	22.0	21.3	21.0	20.6	
18,000	-21	-	-	-	-	29.4	-	-	-	-	25.0	24.2	-	-	-	21.2	20.9	20.5	
20,000	-25	-	-	-	-	29.3	-	-	-	-	-	24.2	-	-	-	21.2	20.8	20.4	
22,000	-28	-	-	-	-	-	-	-	-	-	-	24.1	-	-	-	-	-	20.4	
MAX EGT		1,525°F			1,650°F														
24,000	-33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.4	
25,000	-34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.4	

Power Setting Table

FIGURE F-17

Mass definitions	Airframe + Engines	Equipment (all roles)	Unusable fuel + Oil + Hydraulic fluid	Crew + Catering	Payload	Fuel
Basic empty mass (BEM)	Yes	Yes	Yes			
Dry operation mass (DOM)	Yes	Yes	Yes	Yes		
Zero fuel mass (ZMF)	Yes	Yes	Yes	Yes	Yes	
Ramp mass (RM)	Yes	Yes	Yes	Yes	Yes	Yes (Fuel Load)
Take off mass (TOM)	Yes	Yes	Yes	Yes	Yes	Yes (Toff fuel)
Operating mass (OM)	Yes	Yes	Yes	Yes	Yes	Yes (Toff fuel)
Gross mass (GM)	Yes	Yes	Yes	Yes	Yes	Yes (Fuel remaining)
Landing mass (LM)	Yes	Yes	Yes	Yes	Yes	Yes

FIGURE F-18

Table 2.2.3

23.0 in. Hg (or full throttle) @ 2,300 rpm

Off-peak EGT

Cruise lean mixture @ cruise weight 3,400 lb

ISA Dev.	Press. Alt.	IOAT		Man. Press.	Fuel Flow		Airspeed	
		°C	°F		PPH	GPH	KIAS	KTAS
-20	0	-3	26	23.0	67.6	11.3	152	144
	2,000	-7	20	23.0	69.7	11.6	152	149
	4,000	-11	13	23.0	72.1	12.0	153	154
	6,000	-15	6	23.0	74.4	12.4	153	158
	8,000	-18	-1	22.4	73.8	12.3	150	160
	10,000	-23	-9	20.7	68.4	11.4	143	157
	12,000	-27	-16	19.2	63.8	10.6	135	153
	14,000	-31	-23	17.8	60.0	10.0	127	148
	16,000	-35	-31	16.4	56.3	9.4	117	141
0	0	17	62	23.0	65.4	10.9	147	145
	2,000	13	56	23.0	67.4	11.2	147	149
	4,000	9	49	23.0	69.4	11.6	148	154
	6,000	5	42	23.0	71.7	12.0	148	159
	8,000	2	35	22.4	71.1	11.9	145	160
	10,000	-3	27	20.7	66.2	11.0	137	157
	12,000	-7	20	19.2	61.8	10.3	129	152
	14,000	-11	13	17.8	58.5	9.8	120	146
	16,000	-15	5	16.4	55.3	9.2	109	137
+20	0	37	98	23.0	63.2	10.5	142	145
	2,000	33	92	23.0	65.1	10.9	143	149
	4,000	29	85	23.0	67.1	11.2	143	154
	6,000	25	78	23.0	69.0	11.5	142	158
	8,000	22	71	22.4	68.5	11.4	140	160
	10,000	17	63	20.7	64.0	10.7	132	156
	12,000	13	56	19.2	60.0	10.0	123	151
	14,000	9	48	17.8	57.1	9.5	113	142
	16,000	-	-	-	-	-	-	-

ISA - 20°C
73,25 pph

ISA + 0°C
70,55 pph

ISA - 10°C
71,9 pph

Recommended Cruise Power Settings (continued)

NOTE 1: Full-throttle manifold pressure settings are approximate.

NOTE 2: Shaded areas represent operation with full throttle.

NOTE 3: Fuel flows are to be used for flight planning. Lean using the EGT.

References

- ✓ Aircraft dispatcher oral exam guide 2014
- ✓ ASA test prep
- ✓ Annex 2 10th edition Amendment 43
- ✓ Annex 3 7th edition Amendment 75
- ✓ Annex 6 (I) 9th edition Amendment 38
- ✓ Annex 10 (Vol.2) 6th edition Amendment 85
- ✓ Annex 11 13th edition Amendment 49
- ✓ Annex 14 (Vol.01) 5th edition Amendment 10B
- ✓ Annex 15 14th edition Amendment 38
- ✓ FAA knowledge test
- ✓ Oxford Ground training series for PPL
- ✓ GFD private pilot test book 2015
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- ✓ JAA test prep aviation exam 2010