Exam simulation

ATPL - Airline Transport Pilot license - Principles of Flight

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STUDENT NAME:	DATE AND TIME:

01. How can aviation routine weather reports (METAR) of specific airports be obtained by aircraft in flight:

a) VOLMET
b) SIGMET
c) AFIS
d) ATIS

02. Fallstreaks or virga are:

a) Strong downdraughts in the polar jet stream, associated with jet streaks
b) Gusts associated with a well developed Bora
c) Water or ice particles falling out of a cloud that evaporate before reaching the ground
d) Strong katabatic winds in mountainous areas and accompanied by heavy precipitation

03. A signal sent by radiotelephony consisting of the spoken words PAN PAN, PAN PAN, PAN PAN means:

a) The aircraft is diverting from the route cleared because of a thunderstorm and asks for immediate reclearance
b) Imminent danger threatens the aircraft and immediate assistance is required
c) An aircraft on final approach is starting the missed approach procedure
d) The aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, but immediate assistance is not required

04. A read back is not needed for the following message:

a) Clearance to backtrack on RWY in use
b) Wind velocity
c) Altimeter setting
d) Clearance to take off

05. Absolute instability is said to exist whenever the environmental lapse rate

a) Is less than the dry adiabatic lapse rate
b) Is less than the saturated adiabatic lapse rate
c) Exceeds the dry adiabatic lapse rate
d) Is between the dry and saturated adiabatic lapse rate

06. Which elements of a position report cannot be omitted?

a) Aircraft identification, position, time, level

b) Aircraft identification, position, level

c) Aircraft identification, position, time

d) Aircraft identification, position, next position

07. When the aircraft registration marking is used as a call-sign, your first contact with a station shall be in the following form:

a) The first letter and the last two characters of the aircraft registration marking.

b) The last three characters of the aircraft registration marking.

c) All characters of the aircraft registration marking.

d) The first three characters of the aircraft registration marking.

08. How should a pilot terminate the read-back of an ATC clearance?

a) With his own aircraft call sign

b) With the word 'roger'

c) With the ATC ground station call sign

d) With the word 'wilco'

09. An island appears 30° to the left of the centre line on an airborne weather radar display. What is the true bearing of the aircraft from the island if at the time of observation the aircraft was on a magnetic heading of 276° with the magnetic variation 12°W?

a) 054°

b) 038°

c) 234°

d) 114°

10. Magnetic compass calibration is carried out to reduce:

a) Variation.

b) Deviation.

c) Acceleration errors.

d) Parallax error.

11. What is the average vertical extent of radiation fog?

a) 2 000 FT.
b) 5 000 FT.
c) 500 FT.
d) 10 000 FT.

12. To indicate that he is no longer occupying the active runway a pilot shall report to the controller:

a) Runway free
b) Runway cleared
c) Clear of runway
d) Runway vacated

13. What are the typical differences with regard to the temperature and humidity between an air mass with its origin in the Azores and an air mass with its origin over northern Russia ?

a) The North-Russian air is colder and more humid than the air of the Azores.
b) The air of the Azores is warmer and more humid than the North-Russian air.
c) The North-Russian air is warmer and dryer than the air of the Azores.
d) The air of the Azores is warmer and dryer than the North-Russian air.

14. For a fixed-pitch propeller in flight at a given TAS, the blade angle of attack will:

a) Remain constant if RPM increases.
b) Decrease if RPM decreases.
c) Remain constant if RPM decreases.
d) Increase if RPM decreases.

15. The parameter that determines the relationship between EAS and TAS is:

a) Pressure altitude.
b) Mach number.
c) OAT.
d) Density altitude.

16. Following an explosive decompression, if you are using an oxygen diluter demand system, the regulator controls the amount of air that is mixed with pure oxygen when the supply selector is at the 'normal' position. At what approximate altitude will the regulator supply to the mask become pure oxygen only ?

a) 14000 ft

b) 25000 ft

c) 8000 ft

d) 32000 ft

17. The relative thickness of an aerofoil is expressed as:

a) Metres

b) Camber

c) Degrees cross section tail angle

d) % chord

18. The speed of sound at the sea level in standard atmosphere is:

a) 644 kt

b) 1059 kt

c) 661 kt

d) 332 kt

19. The crankcase is the component which:

a) Provides a mounting for an oil cooler.

b) Converts reciprocating motion into rotary motion.

c) Provides a mounting point for most of the engine components and in which are the main rotating assemblies located.

d) Operates within the float chamber.

20. Arrival and departure documentation is acceptable in the form of:

a) Type-written only.

b) Hand-written in block capitals and in ink.

c) Type-written and electronic form only.

d) Electronic form only.

21. If VOR bearing information is used beyond the published protection range, errors could be caused by:

a) Sky wave interference from the same transmitter

b) Noise from precipitation static exceeding the signal strength of the transmitter

c) Sky wave interference from distant transmitters on the same frequency

d) Interference from other transmitters

22. Given: Distance from departure to destination 340 NM True track 320 W/V 160/40 TAS 110 kt What is the distance of the PET from the departure point?

a) 228 NM

b) 112 NM

c) 219 NM

d) 121 NM

23. What does the word 'correct' mean?

a) That is correct

b) Negative, the correct version is ...

c) Permission for proposed action not granted

d) An error has been made in this transmission. The correct version is ...

24. An aeroplane, being manually flown in the speed unstable region, experiences a disturbance that causes a speed reduction. If the altitude is maintained and thrust remains constant, the aeroplane speed will:

a) Further decrease.

b) Initially further decrease and thereafter increase.

c) Initially increase and thereafter decrease.

d) Increase.

25. Given: CON VOR (N5354.8 W00849.1) DME 30 NM, CRN VOR (N5318.1 W00856.5) DME 25 NM, Aircraft heading 270°(M), Both DME distances decreasing. What is the aircraft position?

ALTIMETER SETTING
SCOTTISH CONTROL 127.27
DUBLIN CONTROL 129.17
SHANNON CONTROL 124.70 127.50 131.15 132.15 134.27 135.60
DUBLIN CONTROL 124.65 136.05 136.15
387 CML
SHANNON CTA (A)

a) N5343 W00925
b) N5335 W00925
c) N5330 W00820
d) N5337 W00820

26. Under EASA Air OPS Part-CAT (CAT.IDE.A.240), in a non-pressurised aeroplane, supplemental oxygen for at least 10% of the passengers is required after the first 30 minutes when the pressure altitude is:

a) Above 13.000 ft.

b) Above 10.000 ft but not exceeding 13.000 ft.

c) Above 10.000 ft but not exceeding 15.000 ft.

d) Above 10.000 ft at any time, with no 30-minute threshold.

27. Max. Exhaust Gas Temperature is theoretically associated with:

a) Full rich setting.

b) Cruising mixture setting.

c) Mixture ratio very close to idle cut-out.

d) Mass ratio of 1/15.

28. Complete the following statement regarding the take-off performance of an aeroplane in performance class A. Following an engine failure at (i) ..... and allowing for a reaction time of (ii) ..... a correctly loaded aircraft must be capable of decelerating to a halt within the (iii) .....

a) (i) V2 (ii) 3 seconds (iii) Take-off distance available

b) (i) V1 (ii) 2 seconds (iii) Accelerate-stop distance available

c) (i) V1 (ii) 2 seconds (iii) Take-off distance available

d) (i) V1 (ii) 1 second (iii) Accelerate-stop distance available

29. If the maximum operating altitude of an airplane is limited by the pressurized cabin, this limitation is due to the maximum:

a) Positive cabin differential pressure at maximum operating ceiling.

b) Negative differential pressure at maximum cabin altitude.

c) Negative cabin differential pressure at maximum operating ceiling.

d) Positive cabin differential pressure at maximum cabin altitude.

30. The Dry Operating Mass is the total mass of the aircraft ready for a specific type of operation but excluding

a) Usable fuel and traffic load.

b) Usable fuel, potable water and lavatory chemicals.

c) Potable water and lavatory chemicals.

d) Usable fuel and crew.

31. During the transmission of numbers containing a decimal point:

a) The term DECIMAL must always be transmitted.

b) The term DECIMAL must be spoken only if followed by three digits.

c) The term DECIMAL can be omitted if no chance of misunderstanding exists.

d) The term DECIMAL can be omitted with friendly ATS units only.

32. According to EASA CS-25 failure-condition classifications, the worst effect of a MAJOR failure condition on occupants excluding flight crew may be:

a) Physical distress, possibly including injuries.

b) Serious or fatal injury to a small number of passengers or cabin crew.

c) Inconvenience.

d) Physical discomfort.

33. 'Frequency wild' in relation to a AC generation system means the generator:

a) Output frequency varies with engine speed.

b) Output frequency is too low.

c) Voltage regulator is out of adjustment.

d) Output frequency is too high.

34. 'Fail safe construction' is:

a) A simple and cheap type of construction.

b) A type of construction in which the load is carried by other components if a part of the structure fails.

c) A construction which is suitable for aerobatic flight.

d) A type of construction for small aircraft only.

35. An aircraft on an IFR flight in VMC experiences radio communication failure. The aircraft is assumed to:

a) Return to the aerodrome of departure

b) Land at the alternate aerodrome

c) Land at the nearest suitable aerodrome

d) Land at the destination aerodrome

36. The following fuel consumption figures are given for a jet aeroplane: -standard taxi fuel: 600 kg. -average cruise consumption: 10000 kg/h. -holding fuel consumption at 1500 ft above alternate airfield elevation: 8000 kg/h. -flight time from departure to destination: 6 hours -fuel for diversion to alternate: 10200 kg. The minimum ramp fuel load is:

a) 79800 kg

b) 74800 kg

c) 77200 kg

d) 77800 kg

37. The vestibular apparatus

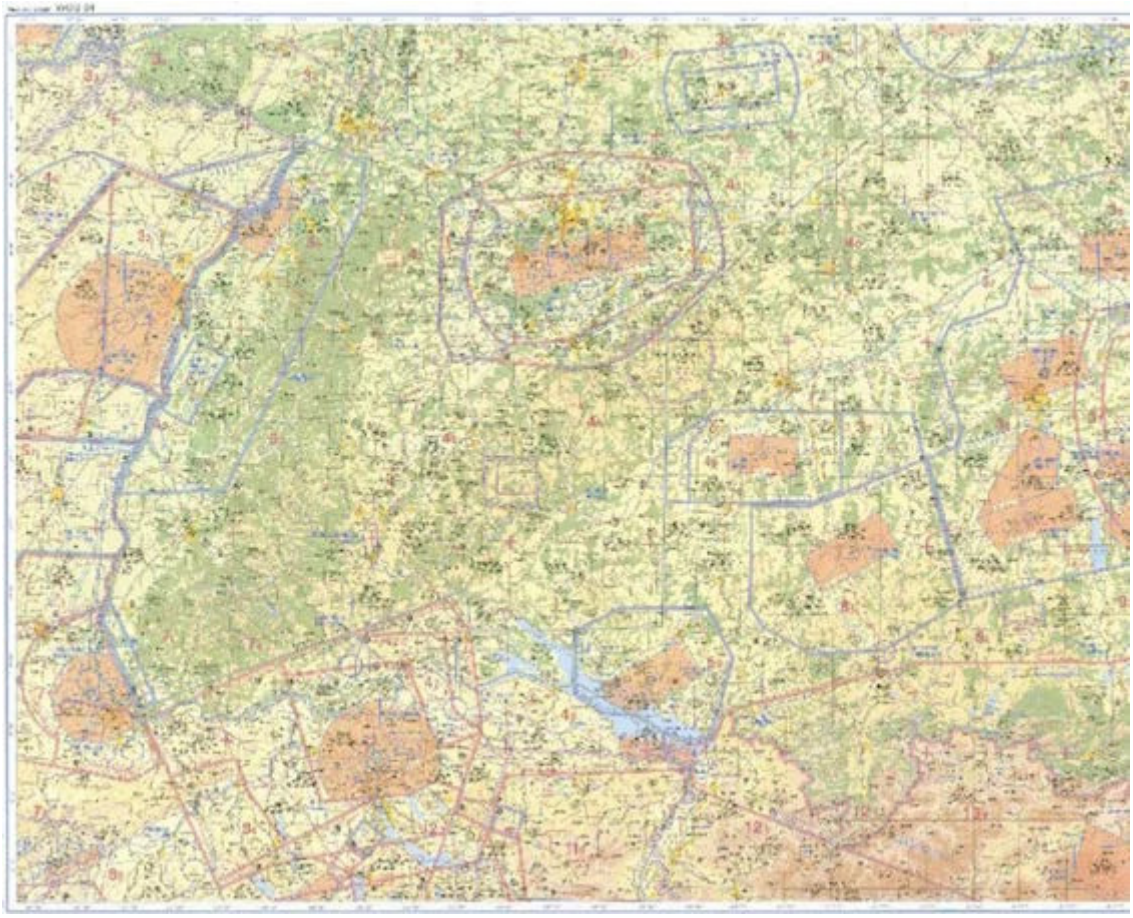
a) Reacts to linear/angular acceleration and gravity

b) Reacts to vibrations of the cochlea

c) Reacts to pressure changes in the middle ear

d) Gives the impression of hearing

38. Refer to the General Student Pilot Route Manual - VFR Chart ED-4. Which navigation aid is located in position 48°30'N, 007°34'E?



a) NDB

b) VOR/DME

c) TACAN

d) VOR

39. Assuming gross mass, altitude and airspeed remain unchanged, movement of the centre of gravity from the forward to the aft limit will cause:

a) Increased cruise range

b) Reduced maximum cruise range

c) Lower optimum cruising speed

d) Higher stall speed

40. The transmitter of RPM indicator may consist of: 1 -a magnetic sensor supplying an induced AC voltage 2 -a DC generator supplying a DC voltage 3 -a single-phase AC generator supplying an AC voltage 4-a three-phase AC generator supplying a three-phase voltage. The combination regrouping all the correct statements is:

a) 1,2,3,4

b) 1,2,3

c) 1,4

d) 2,3,4

41. For an airfield located in the British Isles, the passage of a warm front will usually be indicated by:

a) A fall in temperature, rise in dew point temperature, wind backing and decreasing

b) Rise in temperature, rise in dew point temperature, wind veers and decreases

c) Rise in temperature, rapid rise in pressure, wind backs and becomes gusty

d) Rapid improvement in visibility, pressure falling rapidly, wind veering and increasing

42. What is the most important aspect of the 'backside of the power curve'?

a) The altitude cannot be maintained.

b) The aeroplane will not stall.

c) The elevator must be pulled to lower the nose.

d) The speed is unstable.

43. Find the OPTIMUM ALTITUDE for the twin jet aeroplane. Given: Cruise mass=50000 kg, .78 Mach

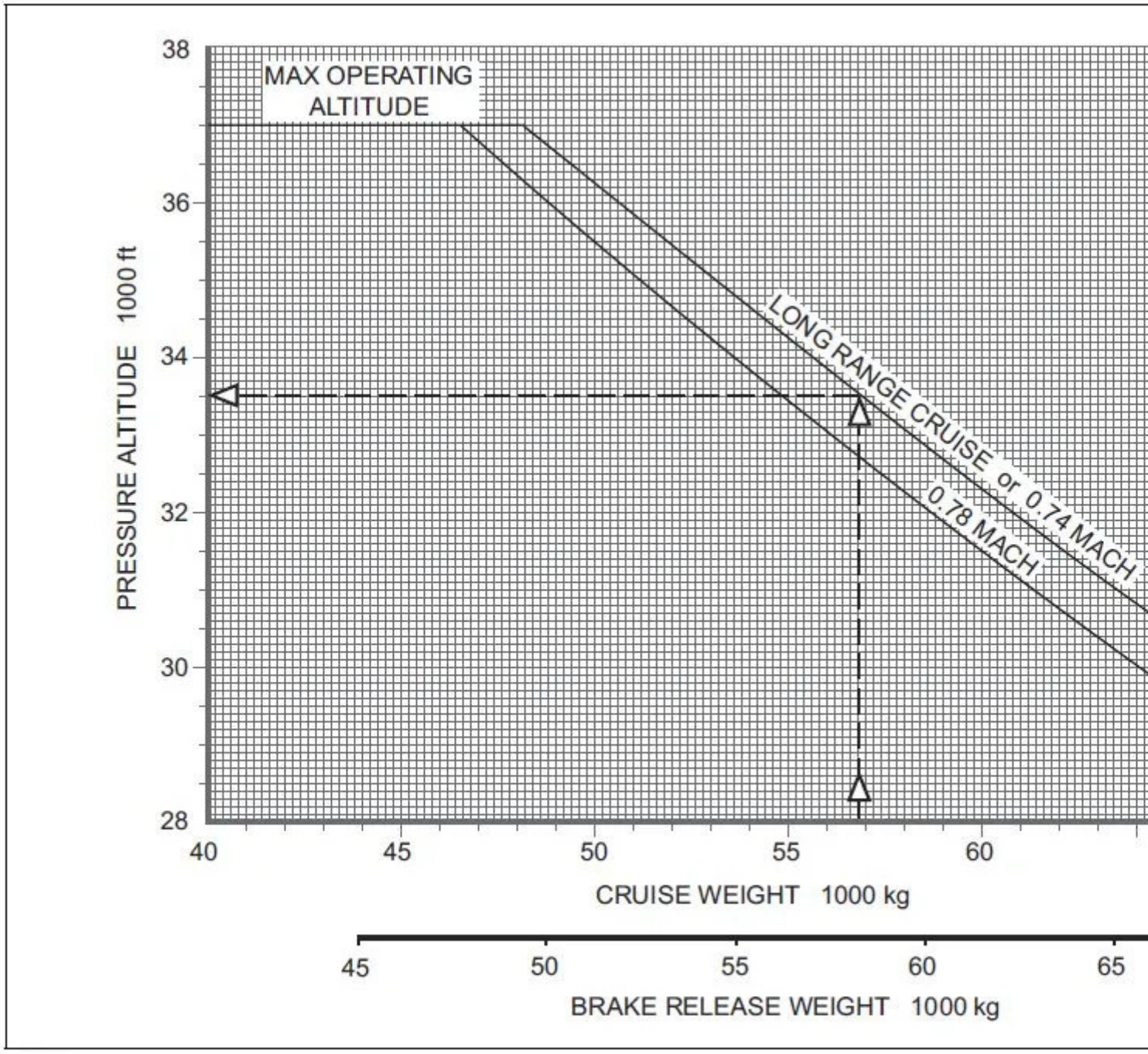


Figure 4.1 Optimum Altitude

a) 36700 ft
b) 36200 ft
c) Maximum operating altitude
d) 35500 ft

44. The primary purpose of the bleed valves fitted to axial flow compressors is to:

a) Control the acceleration time of the engine.

b) Spill compressor air should the engine overspeed thus controlling the speed.

c) Reduce the likelihood of compressor stall.

d) Enable an external air supply to spin up the compressor for engine starting.

45. Due to 'Doppler' effect an apparent decrease in the transmitted frequency, which is proportional to the transmitter's velocity, will occur when:

a) The transmitter and receiver move towards each other

b) The transmitter moves away from the receiver

c) There is no relative movement between the transmitter and the receiver

d) The transmitter moves toward the receiver

46. Divided attention is the ability: 1. to execute several mental activities at almost the same time (i.e. when switching attention from outside the aircraft to the airspeed indicator on the instrument panel) 2. to monitor the progress of a motor programme (i.e. flying or taxiing the airplane) on a relatively subconscious level, while making a radio call at the same time (requiring a rather conscious level) 3. to select information and check if it is relevant to the task in hand. At the same time no other operation can be performed. 4. to delegate tasks to the copilot while concentrating on the procedures

a) 1,2 and 3 are correct, 4 is false

b) 1 and 2 are correct, 3 and 4 are false

c) Only 3 is false

d) 1 and 3 are correct, 2 and 4 are false

47. The OBS is set on 048°, TO appears in the window. The needle is close to full right deflection. The VOR radial is approximately:

a) 218°

b) 058°

c) 238°

d) 038°

48. The centre of gravity of an aeroplane is at 25% of the Mean Aerodynamic Chord.This means that the centre of gravity of the aeroplane is situated at 25% of the length of:

a) The mean aerodynamic chord in relation to the datum

b) The mean aerodynamic chord in relation to the trailing edge

c) The aeroplane in relation to the leading edge

d) The mean aerodynamic chord in relation to the leading edge

49. The exact equation for calculating the convergence between two meridians running through two different positions:Note:GCTTin = Great Circle True Track Initial GCTTfin = Great Circle True Track Final

a) Convergence = 1/2 x (dlong x sin lat)

b) Convergence = GCTTin - GCTTfin

c) Convergence = 1/2 x (GCTTin + GCTTfin)

d) Convergence = (GCTTin + GCTTfin)

50. AIP Which part of the AIP contains information about holding, approach and departure procedures?

a) GEN

b) ENR

c) MAP

d) AD

51. The velocity of sound at the sea level in a standard atmosphere is:

a) 1059 KT

b) 661 KT

c) 332 KT

d) 644 KT

52. About ten identical clouds are in the sky, well isolated from one another, dense, with well defined contours, developing vertically in a cauliflower shape. The side of these clouds lit by the sun is bright white. Their base, relatively dark, is essentially horizontal and at FL 30, and their tops at FL 150. These clouds are

a) Broken Cumulus humilis

b) Towering Cumulus

c) Stratocumulus

d) Altocumulus castellanus

53. The maximum range of primary radar depends on:

a) Wave length

b) Pulse recurrence frequency

c) Pulse length

d) Frequency

54. The floor limit of an aircraft cargo hold is 5000 N/m². It is planned to load-up a cubic container measuring 0,4 m of side. Its maximum gross mass must not exceed: (assume g = 10 m/s²)

a) 80 kg

b) 320 kg

c) 32 kg

d) 800 kg

55. How should an ATS unit instruct Fastair 345 to contact Stephenville RADAR on frequency 132.0083 (8.33 kHz frequency spacing)?

a) Fastair 345 contact Stephenville RADAR channel 132.0083

b) Fastair 345 contact Stephenville RADAR channel 132.010

c) Fastair 345 contact Stephenville RADAR on 132.0083

d) Fastair 345 contact Stephenville RADAR 132.010

56. An aircraft flies a VOR / DME direct approach for which the operational minima are: MDH = 360', horizontal visibility = 1500 m:Visibility given by ATC and received by the crew is 2500 m:The pilot may start the final approach ...

a) If the ceiling transmitted by ATC and received by the crew is higher than 240'

b) If the ceiling transmitted by ATC and received by the crew is higher than 360'

c) If the ceiling transmitted by ATC and received by the crew is higher than 240' during the day and 360' at night

d) Regardless the ceiling given by ATC

57. The chemical substance responsible for addiction to tobacco is

a) Nicotine

b) The combination of nicotine, tar and carbon monoxide

c) Tar

d) Carbon monoxide

58. When AC generators are operated in parallel, they must be of the same:

a) Amperage and kVAR.
b) Voltage and amperage.
c) Frequency and amperage.
d) Voltage and frequency.

59. An aircraft squawking 7700 indicates to the ground station that:

a) The aircraft's transceiver is unserviceable.
b) The aircraft is in distress.
c) The aircraft is being hijacked.
d) There is a sick passenger on board.

60. What weather is prevalent in easterly waves?

a) Thunderstorms and rain.
b) Frontal weather.
c) Clear skies.
d) Continuous rain.

61. Consider the following statements on "departure":

a) As the latitude increases, the departure between two meridians decreases.
b) Departure is independent of difference of longitude.
c) Departure may be calculated using the equation: departure=Sin Lat. x sin Long.
d) As the difference of longitude increases, the departure is constant if the latitude is constant.

62. The vertical speed indicator (VSI) is fed by:

a) Dynamic pressure
b) Total pressure
c) Static pressure
d) Differential pressure

63. The Maximum Zero Fuel Mass is the mass of the aeroplane with no usable fuel on board. It is a limitation which is:

a) Governed by the requirements of the centre of gravity limits and the structural limits of the aeroplane.

b) Tabulated in the Flight Manual against arguments of airfield elevation and temperature.

c) Listed in the Flight Manual as a fixed value. It is a structural limit.

d) Governed by the traffic load to be carried. It also provides protection from excessive 'wing bending'.

64. Precipitation in the form of showers occurs from

a) Stratified clouds

b) Convective clouds

c) Clouds containing only ice crystals

d) Cirro-type clouds

65. The function of a constant speed drive (CSD) is to ensure:

a) That the generator produces a constant frequency.

b) An equal AC voltage output from all generators.

c) That the CSD output remains at a constant RPM irrespective of generator RPM.

d) That the starter-motor maintains a constant RPM irrespective of engine acceleration/deceleration.

66. Given: Distance from departure to destination 140 NM GS Out 90 kt GS Home 80 kt What is the distance of the PET from the departure point?

a) 66 NM

b) 124 NM

c) 70 NM

d) 74 NM

67. The compression ratio of a piston engine is the ratio of the:

a) Weight of the air induced to its weight after compression.

b) Area of the piston to the cylinder volume.

c) Diameter of the bore to the piston stroke.

d) Volume of the cylinder with the piston at bottom dead centre to that with the piston at top dead centre.

68. What does the abbreviation 'RVR' mean?

a) Runway visibility report

b) Radar vectors requested

c) Recleared via route...

d) Runway visual range

69. An aneroid capsule: 1 - measures differential pressure 2 - measures absolute pressure 3 - is used for low pressure measurement 4 - is used for very high pressure measurement. The combination regrouping all the correct statements is:

a) 2, 4.

b) 1, 3.

c) 1, 4.

d) 2, 3.

70. Which of the following will decrease V1?

a) Increased take-off mass

b) Inoperative anti-skid

c) Increased outside air temperature

d) Inoperative flight management system

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Response Scheme

Compare your answers with the following diagram and mark your score!

01: **A**	02: **C**	03: **D**	04: **B**
05: **C**	06: **C**	07: **C**	08: **A**
09: **A**	10: **B**	11: **C**	12: **D**
13: **B**	14: **B**	15: **D**	16: **D**
17: **D**	18: **C**	19: **C**	20: **B**
21: **D**	22: **B**	23: **A**	24: **A**
25: **C**	26: **B**	27: **D**	28: **B**
29: **D**	30: **A**	31: **A**	32: **A**
33: **A**	34: **B**	35: **C**	36: **D**
37: **A**	38: **B**	39: **A**	40: **A**
41: **B**	42: **D**	43: **D**	44: **C**
45: **B**	46: **B**	47: **D**	48: **D**
49: **B**	50: **D**	51: **B**	52: **B**
53: **B**	54: **A**	55: **D**	56: **D**
57: **A**	58: **D**	59: **B**	60: **A**
61: **A**	62: **C**	63: **C**	64: **B**
65: **A**	66: **A**	67: **D**	68: **D**
69: **D**	70: **B**		

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Response form

Use this form to mark your answers

01:	02:	03:	04:
05:	06:	07:	08:
09:	10:	11:	12:
13:	14:	15:	16:
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45:	46:	47:	48:
49:	50:	51:	52:
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65:	66:	67:	68:
69:	70:		