

# Exam simulation

ATPL - Airline Transport Pilot license - IFR Communications



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STUDENT NAME:

DATE AND TIME:

**01. An aircraft DME receiver does not lock on to its own transmissions reflected from the ground because:**

- a) DME transmits twin pulses
- b) They are not on the receiver frequency
- c) DME uses the UHF band
- d) The pulse recurrence rates are varied

**02. An OBS is set to 048 with a TO flag showing. The VOR deviation bar is showing almost full right deflection. Approximately what radial are you on?**

- a) 038
- b) 058
- c) 238
- d) 218

**03. The gyroscope used in an attitude indicator has a spin axis which is:**

- a) Horizontal, perpendicular to the yaw axis.
- b) Horizontal, perpendicular to the longitudinal axis.
- c) Vertical.
- d) Horizontal, parallel to the longitudinal axis.

**04. The 'short period mode' is an:**

- a) Oscillation about the lateral axis
- b) Unstable movement of the aeroplane, induced by the pilot
- c) Oscillation about the longitudinal axis
- d) Oscillation about the vertical axis

**05. In order to completely resynchronise with local time after zone crossing, circadian rhythms require**

- a) Less time when flying from east to west
- b) About one week per 2.5 hours of time shift
- c) About one day per 2.5 hours of time shift
- d) More time when flying from east to west

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## 06. A SANDWICH structural part is:

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- a) A so-called integral construction.
- b) Composed of two thin sheets and a light core material.
- c) Well suited for absorbing point concentrated loads.
- d) Composed of resin and fibres.

## 07. Cabin air for CS-25 aeroplanes is usually taken from:

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- a) The high pressure compressor.
- b) The high pressure compressor and from the low pressure compressor if necessary.
- c) The low pressure compressor.
- d) The second fan stage.

## 08. At a given mass the CG position is at 15% MAC. If the leading edge of MAC is at a position 625.6 inches aft of the datum and the MAC is given as 134.5 inches determine the position of the CG in relation to the datum.

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- a) 605.43 inches aft of datum
- b) 20.18 inches aft of datum
- c) 228.34 inches aft of datum
- d) 645.78 inches aft of datum

## 09. Given: FL120, OAT is ISA standard, CAS is 200 kt, Track is 222°(M), Heading is 215°(M), Variation is 15°W. Time to fly 105 NM is 21 MIN. What is the W/V?

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- a) 040°(T) / 105 kt.
- b) 055°(T) / 105 kt .
- c) 050°(T) / 70 kt.
- d) 065°(T) / 70 kt.

## 10. What is meant by the phrase 'readability 2'?

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- a) Readable
- b) Readable now and then
- c) Readable but with difficulty
- d) Unreadable

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**11. From which of the following would you expect to find facilitation information regarding customs and health formalities ?**

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- a) NAV/RAD charts
- b) ATCC
- c) AIP
- d) NOTAM

**12. The landing field length required for turbojet aeroplanes at the destination (wet condition) is the demonstrated landing distance plus:**

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- a) 67%
- b) 92%
- c) 43%
- d) 70%

**13. Which of the following answers is true?**

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- a) V1 is higher VLOF
- b) V1 is lower or equal to VR
- c) V1 is lower VMCG
- d) V1 is higher VR

**14. In the ATC flight plan Item 15, a cruising speed of 470 knots will be entered as:**

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- a) N0470
- b) N470
- c) 0470K
- d) KN470

**15. The moving part in an AC generator is usually referred to as the:**

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- a) Stator
- b) Oscillator
- c) Rotor
- d) Slip ring

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## 16. The two main design functions of Secondary Surveillance Radar (SSR) Mode S are:

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- a) Collision avoidance using TCAS II and improved long range (HF) communication capability.
- b) Air to ground and ground to air data link communications and improved ATC aircraft surveillance capability
- c) The elimination of ground to air communications and the introduction of automatic separation between aircraft using TCAS II
- d) Continuous automatic position reporting using Global Positioning System (GPS) satellites and collision avoidance using TCAS II

## 17. An aircraft plans to depart London at 1000 UTC and arrive at Munich (EDDM) at 1215 UTC. In the ATC flight plan Item 16 (destination/EET) should be entered with:

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- a) EDDM0215
- b) EDDM2H15
- c) EDDM AT 0215
- d) EDDM1415

## 18. What is the influence of the mass on maximum rate of climb (ROC) speed if all other parameters remain constant?

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- a) The ROC is affected by the mass, but not the ROC speed
- b) The ROC speed decreases with increasing mass
- c) The ROC and the ROC speed are independent of the mass
- d) The ROC speed increases with increasing mass

## 19. SSR - Transponder When the aircraft carries serviceable Mode C transponder, the pilot shall continuously operate this mode

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- a) Unless otherwise directed by ATC.
- b) Only when the aircraft is flying within controlled airspace.
- c) Only when the aircraft is flying within controlled airspace. regardless of ATC instructions.
- d) Only when directed by ATC.

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**20. The ASHTAM provides information on the status of activity of a volcano when a change in its activity is, or is expected to be of operational significance. This information is provided using the volcano level of colour code. When volcanic eruption in progress or volcano dangerous, eruption likely, with ash plume/cloud is reported above FL 250 or is expected to rise above FL 250, the level of alert colour code is**

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- a) YELLOW
- b) RED
- c) ORANGE
- d) GREEN

**21. The commander is required by the authority to present the aircraft documents. He**

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- a) Can request a delay of 48 hours.
- b) Shall do so, within a reasonable period of time.
- c) Shall do so if authorised by the operator.
- d) Can refuse to present them.

**22. On the ground, during a left turn, the turn indicator indicates:**

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- a) Needle to the left, ball to the left
- b) Needle to the left, ball to the right
- c) Needle in the middle, ball to the left
- d) Needle in the middle, ball to the right

**23. In relation to the polar front jet stream, the greatest rate of wind shear is most likely to occur**

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- a) Well below the core
- b) On the tropical side of the core
- c) Close to the core on the polar side
- d) 5000 FT or more above the core

**24. Which of the following statements is (are) correct with regard to computer flight plans 1. The computer takes account of bad weather on the route and adds extra fuel. 2. The computer calculates alternate fuel sufficient for a missed approach, climb, cruise, descent and approach and landing at the destination alternate.**

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- a) Statement 2 only
- b) Neither statement
- c) Statement 1 only
- d) Both statements

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## 25. The stalling speed in IAS will change according to the following factors:

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- a) Decrease in a forward c.g. location, higher altitude and due to the slip stream from a propeller on an engine located forward of the wing
- b) Increase during turn, increased mass and forward c.g. location
- c) Increase with increased load factor, more flaps but will not increase due to the bank angle in a turn
- d) Increase with increased load factor, icing conditions and an aft c.g. location

## 26. The disadvantages of axial flow compressors compared to centrifugal flow compressors are 1 - expensive to manufacture 2 - limited airflow 3 - greater vulnerability to foreign object damage 4 - limited compression ratio The combination of correct answers is:

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- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) 2 and 4

## 27. When will the surface wind in a METAR record a gust factor ?

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- a) When gusts are at least 15 knots above the mean wind speed
- b) With gusts of at least 25 knots
- c) When gusts are at least 10 knots above the mean wind speed
- d) With gusts of at least 35 knots

## 28. In a convergent tube with an incompressible sub-sonic airflow, the following pressure changes will occur: $P_s$ = static pressure. $P_{dyn}$ = dynamic pressure. $P_{tot}$ = total pressure.

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- a)  $P_s$  increases,  $P_{dyn}$  decreases,  $P_{tot}$  remains constant
- b)  $P_s$  decreases,  $P_{dyn}$  increases, static temperature increases
- c)  $P_s$  decreases,  $P_{dyn}$  increases,  $P_{tot}$  remains constant
- d)  $P_s$  decreases,  $P_{tot}$  increases, static temperature decreases

## 29. What does the word 'recleared' mean?

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- a) Permission for proposed action granted
- b) An error has been made in my last transmission
- c) A change has been made to your last clearance
- d) Consider that transmission as not sent

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**30. Given: Maximum structural take-off mass= 146 900 kg Maximum structural landing mass= 93 800 kg Maximum zero fuel mass= 86 400 kg. Trip fuel= 27 500 kg. Block fuel= 35 500 kg. Engine starting and taxi fuel = 1 000 kg. The maximum take-off mass is equal to:**

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- a) 113 900 kg
- b) 121 300 kg
- c) 120 300 kg
- d) 120 900 kg

**31. You are to determine the maximum fuel load which can be carried in the following conditions: - dry operating mass : 2800 kg - trip fuel : 300 kg - traffic load : 400 kg - maximum take-off mass : 4200 kg - maximum landing mass : 3700 kg**

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- a) 700 kg
- b) 1000 kg
- c) 500 kg
- d) 800 kg

**32. What is the consequence of a microphone button stuck on transmit (switched 'on')?**

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- a) None
- b) Other stations will have to use the 'words twice' technique
- c) The frequency cannot be used by others
- d) Readability will improve for all stations

**33. You are flying from A (50°N 10°W) to B (58°N 02°E). If initial great circle track is 047°(T) what is final great circle track?**

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- a) 43°
- b) 52°
- c) 29°
- d) 57°

**34. What is the frequency separation between consecutive frequencies in the VHF band:**

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- a) 25 kHz
- b) 75 kHz
- c) 8.33 kHz
- d) 50 kHz

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**35. An aeroplane has a stall speed of 78 KCAS at its gross weight of 6850 lbs. What is the stall speed when the weight is 5000 lbs?**

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- a) 78 KCAS
- b) 91 KCAS
- c) 57 KCAS
- d) 67 KCAS

**36. What does the word 'report' mean?**

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- a) Pass me the following information
- b) Examine a system or procedure
- c) Say again
- d) Repeat all of this message back to me exactly as received

**37. What does the phrase 'Verify' mean?**

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- a) Read back VDF bearing
- b) Repeat your last transmission
- c) Consider that transmission as not sent
- d) Check and confirm with originator

**38. One important advantage the turbulent boundary layer has over the laminar layer is that:**

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- a) It has less tendency to separate from the surface
- b) Energy is less
- c) Skin friction drag is less
- d) It is thinner

**39. Generally, the time required for dark adaptation is:**

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- a) 1/10 sec
- b) 10 sec
- c) 10 min
- d) 30 min

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## 40. Acute stress quickly leads to:

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- a) The mobilization of resources required to cope with the stressor
- b) A state of overactivation beyond the control of willpower
- c) A permanent state of incapacitation
- d) A decrease in the amount of resources mobilized to face the situation

## 41. Given: Distance from departure to destination: 2000 NM Endurance: 5 h TAS: 500 kt Ground Speed Out: 480 kt Ground Speed Home: 520 kt. What is the distance of the PSR from the departure point?

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- a) 1248 NM
- b) 752 NM
- c) 624 NM
- d) 1040 NM

## 42. Given: TAS = 270 kt, True HDG = 270°, Actual wind 205°(T)/30kt, Calculate the drift angle and GS?

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- a) 6R - 251kt
- b) 6L - 256kt
- c) 8R - 259kt
- d) 6R - 259kt

## 43. Which of the following statement(s) is/are correct? - 1: The retina has rods on its peripheral zone and cones on its central zone - 2: The retina has cones and the crystalline lens has rods - 3: The rods allow for night-vision - 4: The cones are located on the peripheral zone of the retina

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- a) 4
- b) 1,3
- c) 2,3
- d) 1

## 44. Which of the following statements about a Mach trimmer is correct?

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- a) A straight wing aeroplane always needs a Mach trimmer for flying at Mach numbers close to MMO
- b) A Mach trimmer corrects the change in stick force stability of a swept wing aeroplane above a certain Mach number
- c) The Mach trimmer corrects the natural tendency of a swept wing aeroplane to pitch-up
- d) A Mach trimmer reduces the stick force stability of a straight wing aeroplane to zero at high Mach numbers

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**45. When completing an ATC flight plan for a European destination, clock times are to be expressed in:**

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- a) Local mean time
- b) Local standard time
- c) UTC
- d) Central European Time

**46. According to the recommended 'noise abatement take-off and climb procedure' NADP2, established in ICAO Doc 8168, acceleration and flaps/slats retraction is initiated:**

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- a) Not below 1 000 ft
- b) Not below 800 ft
- c) At 1 500 ft
- d) At 3 000 ft

**47. What is the correct way of transmitting 1001 as a QNH?**

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- a) QNH one double 'O' one
- b) QNH one zero zero one
- c) QNH one double zero one
- d) QNH one thousand and one

**48. In cruise flight, a centre of gravity moving aft will:**

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- a) Decrease longitudinal static stability
- b) Not change the manoeuvrability
- c) Have no effect on longitudinal static stability
- d) Increase longitudinal static stability

**49. The acquisition of skill comprises three stages (Anderson model):**

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- a) Cognitive, associative and knowledge
- b) Cognitive, associative and autonomous
- c) Automatic, cognitive and knowledge
- d) Associative, autonomous and expert

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## 50. Concerning the capacity of the human long-term memory

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- a) It is structurally limited in terms of storage capacity, but unlimited in terms of storage time
- b) It is structurally limited in terms of storage time but not in terms of capacity
- c) Its storage capacity is unlimited
- d) Its mode of storing information is passive, making memory searches effective

## 51. Overloading has the following effects on performance:

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- a) Reduced take off and landing distance, increased VNE and increased fuel consumption
- b) Increased take off and landing distance, increased rate of climb and increased fuel consumption
- c) Reduced take off and landing distance, increased VNE and reduced rate of climb
- d) Increased take off and landing distance, reduced rate of climb and increased fuel consumption

## 52. Fuel/air ratio is the ratio between the:

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- a) Volume of fuel and volume of air entering the carburettor.
- b) Mass of fuel and mass of air entering the cylinder.
- c) Mass of fuel and mass of air entering the carburettor.
- d) Volume of fuel and volume of air entering the cylinder.

## 53. To reduce the risk of tyre burst due to overheating, for example after heavy braking during a rejected take-off, aircraft wheels may be fitted with:

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- a) A pressure-relief valve in the filler valve only.
- b) Thermal fuse plugs that melt at a preset temperature and deflate the tyre.
- c) A water-injection cooling system.
- d) An anti-skid emergency-burst function linked to tyre temperature.

## 54. The purpose of a voltage regulator is to control the output voltage of the:

---

- a) Generator at varying loads and speeds.
- b) TRU.
- c) Batteries at varying loads.
- d) Generators at varying speeds and the batteries at varying loads.

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**55. The otoliths in the inner ear are sensitive to:**

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- a) Angular acceleration
- b) Angular speed
- c) Linear acceleration and gravity
- d) Constant speed only

**56. The equatorial easterly jet is a jet stream that occurs:**

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- a) Only in the winter of the northern hemisphere at approximately 30000'
- b) Only in the summer of the northern hemisphere at approximately 45000'
- c) During the whole year in the northern hemisphere
- d) During the whole year in the southern hemisphere

**57. In tropical zones, it is recommended that:**

---

- a) Cold drinks be taken from sealed containers
- b) One eats fruit without peeling them, to ensure a supply of vitamins
- c) One eats raw vegetables
- d) One uses ice cubes in cold drinks

**58. The QNH at an airfield in California located 69 metres below sea level is 1018 hPa. The air temperature is 10°C higher than a standard atmosphere. What is the QFF?**

---

- a) Less than 1018 hPa
- b) 1018 hPa
- c) More than 1018 hPa
- d) It is not possible to give a definitive answer

**59. A chip detector in the oil system of an engine/gearbox is to indicate that**

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- a) To indicate that seals are worn.
- b) The piston rings are worn.
- c) The oil temperature is too high.
- d) There are metal particles in the oil.

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**60. During the winter months in mid-latitudes in the northern hemisphere, the polar front jet stream moves toward the**

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- a) North and speed decreases
- b) South and speed increases
- c) North and speed increases
- d) South and speed decreases

**61. According to EASA CS the allowable quantitative average failure probability per flight hour for a HAZARDOUS FAILURE should be on the order of:**

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- a) Between  $10^{-5}$  and  $10^{-7}$  (remote probability)
- b) Between  $10^{-3}$  and  $10^{-5}$  (probable)
- c) Between  $10^{-7}$  and  $10^{-9}$  (extremely remote probability)
- d) Less than  $10^{-9}$  (extremely improbable)

**62. Comparing the lift coefficient and drag coefficient at normal angle of attack:**

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- a) CL is much greater than CD
- b) CL is much lower than CD
- c) CL is lower than CD
- d) CL has approximately the same value as CD

**63. Instrument Departure Procedure - Wind correction. Flying an Instrument Departure Procedure pilots are expected to:**

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- a) Request from ATC an adequate heading to cater for wind direction and strength.
- b) Ignore the wind and proceed on a heading equal to the track.
- c) Correct the track for known wind to remain within the protected airspace.
- d) Request a clearance from ATC with regards to a wind correction to be applied.

**64. You are flying a constant compass heading of  $252^\circ$ . Variation is  $22^\circ\text{E}$ , deviation is  $3^\circ\text{W}$  and your INS is showing a drift of  $9^\circ$  right. True track is ?**

---

- a)  $242^\circ$
- b)  $224^\circ$
- c)  $262^\circ$
- d)  $280^\circ$

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## 65. Regarding Ohm's law:

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- a) The current in a circuit is directly proportional to voltage.
- b) The current in a circuit is inversely proportional to voltage.
- c) The power in the circuit is inversely proportional to the square of the current.
- d) The current in a circuit is directly proportional to the resistance of the circuit.

## 66. Aircraft XY-ABC is making a test transmission with Stephenville TOWER on frequency 118.7. What is the correct phrasing for this transmission:

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- a) Stephenville TOWER XY-ABC radio check 118.7
- b) Stephenville TOWER XY-ABC frequency check
- c) Stephenville TOWER XY-ABC signal check
- d) Stephenville TOWER XY-ABC pre-flight check

## 67. A conventional stabiliser on a stable aeroplane in a normal cruise condition: 1 - always provides negative lift. 2 - contributes to the total lift of the aeroplane. 3 - may stall before the wing, in icing conditions, with large flap settings, unless adequate design and/or operational precautions are taken. 4 - is necessary to balance the total pitch moment of the aeroplane. Which of the following lists all the correct statements?

---

- a) 2, 3 and 4
- b) 1 and 4
- c) 1 and 3
- d) 1, 3 and 4

## 68. In an unstable layer there are cumuliform clouds. The vertical extent of these clouds depends on the

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- a) Air pressure at the surface
- b) Wind direction
- c) Pressure at different levels
- d) Thickness of the unstable layer

## 69. The formula for the Mach Number is: (a= speed of sound)

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- a)  $M = a / TAS$
- b)  $M = TAS * a$
- c)  $M = TAS / a$
- d)  $M = IAS / a$

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**70. Unless otherwise prescribed by the appropriate ATS authority, the horizontal radar separation minimum shall be:**

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- a) 3.0 NM.
- b) 5.0 NM.
- c) 3.5 NM.
- d) 10.0 NM.

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## Response Scheme

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

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