

# Simulazione di Esame

Mass and Balance - ATPL - Airline Transport Pilot license, 70 domande in 70 minuti!



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NOME ALLIEVO:

DATA & ORA:

**01. According with DOC 4444 (ICAO), a wake turbulence radar separation minima of 9,3 km (5,0 NM) shall be applied when a:**

- a) HEAVY aircraft is crossing behind a HEAVY aircraft, at the same altitude or less than 300 m (1 000 ft)
- b) LIGHT aircraft is crossing behind a HEAVY aircraft, at the same altitude or less than 300 m (1 000 ft)
- c) MEDIUM aircraft is crossing behind a MEDIUM aircraft, at the same altitude or less than 300 m (1 000 ft)
- d) LIGHT aircraft is crossing behind a MEDIUM aircraft, at the same altitude or less than 300 m (1 000 ft)

**02. The modern anti-skid processes are based on the use of a computer whose input data is: 1. idle wheel speed (measured)2. braked wheel speed (measured)3. brake temperature (measured)4. desired idle wheel train slipping rate5. tire pressur The combination regrouping all the correct statements is:**

- a) 1, 2, 4.
- b) 1, 3.
- c) 2, 4.
- d) 1, 2, 3, 4, 5.

**03. What are the most frequent results of an self-centred captain on the flight deck?**

- a) A major risk of authority inversion if the co-pilot is unassertive
- b) High group performance despite the strained relations
- c) Performance is very poor as self-centred behaviour leads to an increase of cooperation and efficiency
- d) In a two-pilot flight deck, the co-pilot is ignored and may react by disengaging, showing delayed responses or aggression

**04. Personality is based on:1. Heredity2. Upbringing3. Experience4. Childhood**

- a) 1, 2, 3 and 4 are correct
- b) 2, 3 and 4 only are correct
- c) None of the listed answers is correct
- d) 1, 2 and 4 only are correct

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**05. The planned flight is over a distance of 440 NM. Based on the wind charts at altitude the following components are found: FL50: -30kt FL100: -50kt FL180: -70kt. The Operations Manual in appendix details the aircraft's performances. Which of the following flight levels (FL) gives the best range performance:**

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- a) FL 100
- b) FL 180
- c) Either FL 050 or FL 100
- d) FL 050

**06. The take-off mass of an aeroplane is 117 000 kg, comprising a traffic load of 18 000 kg and fuel of 46 000 kg. What is the dry operating mass?**

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- a) 64 000 kg
- b) 53 000 kg
- c) 99 000 kg
- d) 71 000 kg

**07. During climb to the cruising level, a headwind component:**

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- a) Increases the climb time
- b) Increases the amount of fuel for the climb
- c) Decreases the climb time
- d) Decreases the ground distance flown during that climb

**08. What does the instruction 'Fastair 345 recycle 1240' mean?**

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- a) Fastair 345 is requested to set new code 1240
- b) Fastair 345 is requested to reselect assigned mode and code 1240
- c) RADAR instructs Fastair 345 to stop squawk 1240 immediately
- d) RADAR informs Fastair 345 that radar service is terminated at time 1240

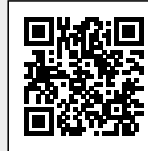
**09. The operating mass of an aeroplane is:**

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- a) The empty mass plus crew, crew baggage and catering.
- b) The empty mass plus the take-off fuel mass.
- c) The empty mass plus the trip fuel mass.
- d) The dry operating mass plus the take-off fuel mass.

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**10. A locator: 1 - is a low powered beacon 2 - is a high powered beacon 3 - has a range of 10 - 25NM 4 - has a range of 10 - 200NM**

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- a) 1 and 4
- b) 2 and 3
- c) 1 and 3
- d) With ON selected a reply in the modes A, C and S can be transmitted.

**11. A sample of moist but unsaturated air may become saturated by**

---

- a) Expanding it adiabatically
- b) Compressing it adiabatically
- c) Lowering the pressure, keeping temperature constant
- d) Raising the temperature

**12. An aircraft is considered to overtake another if it approaches the other aircraft from the rear on a line forming an angle of less than:**

---

- a) 50 degrees with the plane of symmetry of the latter
- b) 70 degrees with the plane of symmetry of the latter
- c) 80 degrees with the plane of symmetry of the latter
- d) 60 degrees with the plane of symmetry of the latter

**13. What will be the effect on the reading of an altimeter of an aircraft parked on the ground during the period following the passage of an active cold front?**

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- a) It will have increased
- b) It will remain unchanged
- c) It will show a small increase or decrease
- d) It will have decreased

**14. According to PART-FCL, Medical certificates classes are:**

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

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**15. What is the SI unit of measurement for power?**

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- a) Pa/m<sup>2</sup>
- b) Kg/m/s<sup>2</sup>
- c) N/m
- d) Nm/s

**16. What is the maximum distance at which you may expect strong VHF reception over flat terrain at FL 140 ?**

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- a) About 240 NM
- b) About 300 NM
- c) About 40 NM
- d) About 140 NM

**17. An aircraft is flying in the southern hemisphere at low altitude (less than 2000') and going directly away from a centre of low pressure. What direction, relative to the aircraft, does the wind come from?**

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- a) From the right and slightly on the tail
- b) From the right and slightly on the nose
- c) From the left and slightly on the tail
- d) From the left and slightly on the nose

**18. Given: TAS = 230 kt, HDG (T) = 250°, W/V = 205/10kt. Calculate the drift and GS?**

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- a) 2L - 224 kt
- b) 1L - 225 kt
- c) 2R - 223 kt
- d) 1R - 221 kt

**19. An aircraft departs from position A (04°10' S 178°22'W) and flies northward following the meridian for 2950 NM. It then flies westward along the parallel of latitude for 382 NM to position B. The coordinates of position B are?**

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- a) 45°00'N 169°22'W
- b) The coordinates of position B are? 45°00'N 169°22'W 53°20'N 169°22'W
- c) 53°20'N 172°38'E
- d) 45°00'N 172°38'E

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**20. Some of the FMS have a navigation mode called Dead Reckoning mode (DR), computing airspeed, heading, wind data ground speed and time. This mode is:**

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- a) A navigation mode used to monitor the FMS position.
- b) An operating mode used to intercept radials To or From a flight plan waypoint.
- c) The normal navigation mode for FMS which do not use Inertial navigation Systems INS to compute the aircraft position.
- d) A back up navigation mode to compute a FMS position when the other navigation sensors are no longer operating.

**21. In accordance to CS 25 which of the following listed speeds are used for determination of V2min:**

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- a) VMCG, V2
- b) VSR, VMCA
- c) V1, VR
- d) VLOF, VMC

**22. An aeroplane whose maximum approved configuration is 200 passenger seats must be equipped with:**

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- a) 3 hand fire extinguishers in the compartment.
- b) 4 hand fire extinguishers in the passenger compartment.
- c) 7 hand fire extinguishers in the passenger compartment.
- d) 5 hand fire extinguishers in the passenger compartment.

**23. Refer to the Jeppesen General Student Pilot Route Manual - VFR Chart ED-4An aeroplane is flying VFR and approaching position TANGO VORTAC (48°37'N, 009°16'E) at FL 055 and magnetic course 090°, distance from VORTAC TANGO 20 NM. What is the frequency of the TANGO VORTAC.**

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- a) 112.50 MHz
- b) 109.20 MHz
- c) 112.50 MHz 109.20 MHz 422 kHz
- d) 118.80 MHz

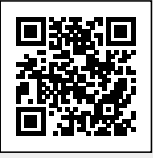
**24. Visual perception of depth at close to medium distance is primarily due to:**

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- a) Binocular vision
- b) The high sensitivity of the retina
- c) Peripheral vision
- d) Interactions between cones and rods

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**25. The most widely used electrical frequency in aircraft is:**

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- a) 50 Hz.
- b) 200 Hz.
- c) 60 Hz.
- d) 400 hz.

**26. What are the standard masses used for crew?**

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- a) 88 kgs for flight crew, 76 kgs cabin crew, not including baggage
- b) 85 kgs for flight crew, 75 kgs cabin crew, not including hand baggage
- c) 88 kgs for flight crew, 76 kgs cabin crew, including baggage.
- d) 85 kgs for flight crew, 75 kgs cabin crew, including hand baggage

**27. If it exists, the M.M.E.L. (Master Minimum Equipment List) is drawn up by:**

---

- a) The aircraft manufacturer's list.
- b) The operator.
- c) The aircraft state of registry.
- d) The manufacturer / the type certificate holder.

**28. The lift coefficient (CL) of an aeroplane in steady horizontal flight is 0.35. An increase in angle of attack of 1 degree would increase CL by 0.079. If a vertical gust instantly changes the angle of attack by 2 degrees, the load factor will be:**

---

- a) 0.9
- b) 1.45
- c) 1.9
- d) 0.45

**29. After having programmed your flight director, you see that the indications of your ADI (Attitude Director indicator) are as represented in diagram N°1 of the appended annex. On this instrument, the command bars indicate that you must:**

---

- a) Decrease the flight attitude and bank your airplane to the left until the command bars recentre on the symbolic aeroplane.
- b) Increase the flight attitude and bank your aeroplane to the right until the command bars recentre on the symbolic aeroplane.
- c) Decrease the flight attitude and bank your airplane to the right until the command bars recentre on the symbolic aeroplane.
- d) Increase the flight attitude and bank your airplane to the left until the command bars recentre on the symbolic aeroplane.

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**30. A pitot tube covered by ice which blocks the ram air inlet will affect the following instrument (s):**

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- a) Vertical speed indicator only.
- b) Altimeter only.
- c) Airspeed indicator, altimeter and vertical speed indicator.
- d) Airspeed indicator only.

**31. Which phrase shall be used if you want to say: 'I understand your message and will comply with it':**

---

- a) Roger
- b) Will comply with your instruction
- c) Wilco
- d) OK, will do it

**32. Must a 'general call' be acknowledged'?**

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- a) Yes, from all stations in the sequence they have been addressed
- b) Yes, but only from the station first called
- c) Yes, from all stations in a random sequence
- d) No

**33. A pilot engages the control wheel steering (CWS) of a conventional autopilot and carries out a manoeuvre in roll. When the control wheel is released, the autopilot will:**

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- a) Roll wings level and maintain the heading obtained at that moment.
- b) Restore the flight attitude and the rate of turn selected on the autopilot control display unit.
- c) Maintain the track and the flight attitude obtained at that moment.
- d) Maintain the flight attitude obtained at that moment.

**34. False beams on the ILS glidepath are:**

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- a) Only found if more than 10° left or right of localiser centreline
- b) Only found if flying the backbeam ILS approach
- c) Only found below the correct glideslope
- d) 20NM from touchdown inbound and 8° displaced from the localiser centreline.

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**35. What does the abbreviation 'SAR' mean?**

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- a) Surveillance airport radar.
- b) Standard arrival route.
- c) Search and rescue.
- d) Secondary altimeter responder.

**36. Given: True HDG = 233°, TAS = 480 kt, Track (T) = 240°, GS = 523 kt. Calculate the W/V?**

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- a) 4
- b) 5
- c) 7
- d) 6

**37. Refer to the Student Pilot Route Manual: E LO 2. An appropriate flight level for flight on airway B3 from CHATILLON CTL 117.6 (49°08'N 003°35'E) to CAMBRAI CMB 112.6 (50°14'N 003°09'E) is:**

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- a) FL50
- b) FL80
- c) FL170
- d) FL60

**38. Which phrase shall be used if the repetition of an entire message is required:**

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- a) Say again
- b) Repeat your last transmission
- c) What was your message?
- d) Repeat your message

**39. If you are flying at FL 300 in an air mass that is 15°C warmer than a standard atmosphere, what is the outside temperature likely to be?**

---

- a) -60°C
- b) -45°C
- c) -15°C
- d) -30°C



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## 40. What are the propagation characteristics of VHF:

---

- a) Practically straight-line similar to light waves
- b) Similar to short waves with practically no atmospheric disturbance
- c) The waves travel along the surface of the earth and penetrate into valleys in a way that topographical obstacles have no influence
- d) 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

## 41. An aircraft is descending down a 6% slope whilst maintaining a GS of 300 KT. The rate of descent of the aircraft is approximately:

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- a) 3600 fpm
- b) 10800 fpm
- c) 900 fpm
- d) 1800 fpm

## 42. What is the temperature deviation (°C) from ISA over 50° N 010°E ?

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- a) -55
- b) -10
- c) +10
- d) +2

## 43. The diagram which shows a 40° left bank and 15° nose down attitude is n°

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

## 44. ATIS broadcast

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- a) Shall not be transmitted on the voice channel of an ILS
- b) Shall only be transmitted on a discrete VHF frequency
- c) Shall not be transmitted on the voice of a VOR
- d) Shall be transmitted on the voice channel of an ILS, on a discrete VHF frequency or on the voice channel of a VOR

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## 45. Which statement regarding V1 is correct?

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- a) V1 must not exceed VMCG
- b) V1 must not exceed VR
- c) The V1 correction for up-slope is negative
- d) When determining the V1, reverse thrust is only allowed to be taken into account on the remaining symmetric engines

## 46. A typical frequency employed in Distance Measuring Equipment (DME) is:

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- a) 100 MHz
- b) 10 MHz
- c) 100 GHz
- d) SHF band and uses frequency modulation techniques

## 47. We can observe the following in relation to a state of hypothermia:

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- a) A substantial increase in internal body temperature whereas peripheral temperature at the skin is stable
- b) A rapid fall in ambient temperature
- c) Reasoning problems as soon as body temperature falls below 37°C
- d) Greater capacity for adaptation than in a hot atmosphere

## 48. Which definition of propeller parameters is correct?

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- a) Blade angle is the angle between the blade chord line and the propeller axis
- b) Angle of attack is the angle between the blade chord line and the propeller vertical plane
- c) Geometric pitch is the theoretical distance a propeller blade element would travel in a forward direction during one revolution
- d) Critical tip velocity is the propeller speed at which flow separation first occurs at some part of the blade

## 49. For the same TAS, when pressure altitude decreases below the tropopause:

---

- a) Mach number remains constant.
- b) The difference between surrounding conditions and ISA must be known to deduce the Mach number variation.
- c) Mach number increases.
- d) Mach number decreases.

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**50. A chart has the scale 1:1.000.000. From A to B on the chart measures 3,8 cm. The distance from A to B in NM is:**

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- a) 70,4
- b) 38,1
- c) 20,5
- d) 205

**51. When Mode C is selected on the aircraft SSR transponder the additional information transmitted is:**

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- a) Altitude based on regional QNH
- b) Aircraft height based on sub-scale setting
- c) Flight level based on 1013.25 hPa
- d) Simultaneously transmit weather and mapping beams

**52. Which of the following coordinate systems is used by the NAVSTAR/GPS receiver to calculate position (latitude, longitude and altitude)?**

---

- a) ED 50
- b) ED 87
- c) PZ 90
- d) 260°(M)

**53. An aeroplane executes a steady glide at the speed for minimum glide angle. If the forward speed is kept constant, what is the effect of a lower mass? Rate of descent / Glide angle / CL / CD ratio**

---

- a) Increases / increases / decreases
- b) Increases / constant / increases
- c) Increases / increases / constant
- d) Decreases / constant / decreases

**54. What type of fog is most likely to form over flat land during a clear night, with calm or light wind conditions ?**

---

- a) Advection.
- b) Radiation.
- c) Orographic.
- d) Steam.

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**55. What is normally used for ATIS broadcasts ?**

---

- a) Voice channel of an ILS
- b) NDB frequencies
- c) Discrete VHF frequency or/and VOR
- d) DME voice channel

---

**56. SSR - Transponder Pilots shall not SQUAWK IDENT unless they:**

---

- a) Operate within controlled airspace
- b) Are requested by ATC
- c) Operate outside controlled airspace
- d) Operate a transponder with Mode C

---

**57. In order to perform a steady level turn at constant speed in an aeroplane, the pilot must:**

---

- a) Increase thrust/power and keep angle of attack unchanged.
- b) Increase thrust/power and decrease angle of attack.
- c) Increase thrust/power and angle of attack.
- d) Increase angle of attack and keep thrust/power unchanged.

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**58. In accordance with JAR-OPS 1 and if necessary, the number of life rafts to be carried on board an aeroplane must allow the transportation of the entire aeroplane occupants:**

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- a) Plus 10 %.
- b) In the case of a loss of one raft of the largest rated capacity.
- c) Plus 30 %.
- d) Plus 30 %.

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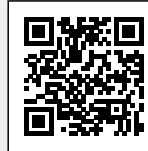
**59. At a certain position, the temperature on the 300 hPa chart is -48°C**

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- a) According to the Significant Weather Chart, the tropopause is at FL 330. What is the most likely temperature at FL 350?
- b) -50°C
- c) -54°C
- d) -58°C

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**60. What phrase shall be used when asking for the readability of a transmission?**

---

- a) Read back
- b) Report readability
- c) How do you read?
- d) Read you loud and clear

**61. What does the term 'air-ground communication' mean?**

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- a) One-way communication from aircraft to stations or locations on the surface of the earth
- b) One-way communication from 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)

**62. Which aeronautical chart symbol indicates a group of unlighted obstacles?**

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- a) 294° - 80 NM
- b) 075° - 81 NM
- c) 286° - 81 NM
- d) 277° - 83 NM

**63. The principle of 'Schuler Tuning' as applied to the operation of Inertial Navigation Systems/ Inertial Reference Systems is applicable to:**

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- a) 265° - 17 NM
- b) 086° - 18 NM
- c) 257° - 17 NM
- d) 077° - 18 NM

**64. 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.

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## 65. The centre of gravity of an aircraft

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- a) Is in a fixed position and is unaffected by aircraft loading.
- b) May only be moved if permitted by the regulating authority and endorsed in the aircraft's certificate of airworthiness.
- c) Must be maintained in a fixed position by careful distribution of the load.
- d) Can be allowed to move between defined limits.

## 66. Which is true of the aircraft basic empty mass?

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- a) It is a component of dry operating mass.
- b) It is the actual take-off mass, less traffic load.
- c) It is dry operating mass minus traffic load.
- d) It is dry operating mass minus fuel load.

**67. For a planned flight the calculated fuel is as follows: Flight time: 3h06min The reserve fuel, at any time, should not be less than 30% of the remaining trip fuel. Taxi fuel: 8 kg Block fuel: 118 kg How much fuel should remain after 2 hours flight time?**

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- a) 39 kg trip fuel and 12 kg reserve fuel.
- b) 30 kg trip fuel and 9 kg reserve fuel.
- c) 39 kg trip fuel and no reserve fuel.
- d) 27 kg trip fuel and 12 kg reserve fuel.

## 68. Flight data recorders must keep the data and parameters recorded during at least the last:

---

- a) 30 hours of operation.
- b) Flight.
- c) 25 hours of operation.
- d) 48 hours of operation.

**69. An aircraft is in cruising flight at FL 095, GS 155 KT. The pilot intends to descend at 500 fpm to arrive overhead the MAN VOR at 2000' (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) 48 NM
- b) 38 NM
- c) 41 NM
- d) 45 NM

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**70. On-board electrical systems are protected against faults of the following type: 1) AC generator over-voltage 2) AC generator under-voltage 3) over-current 4) over-speed 5) under-frequency 6) undue vibration of AC generators**  
**The combination of correct statements is:**

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- a) 1, 2, 4, 6
- b) 1, 2, 3, 4, 5
- c) 2, 3, 4, 5, 6
- d) 1, 3, 5, 6

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## Schema Risposte

Confronta le risposte fornite con il seguente schema e segna il tuo punteggio!

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