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# Simulazione di Esame

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

NOME ALLIEVO:

DATA & ORA:

**01. 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?**

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

**02. In the absence of position and instrument errors:**

- a) IAS = EAS.
- b) IAS = CAS.
- c) CAS = TAS.
- d) CAS = EAS.

**03. Mark the correct statement concerning the flight through an inversion caused by subsidence.**

- a) During climb, the increased air density above the inversion layer will cause a certain increase in the aircraft performance (i.e. lift and thrust) and the pilot will experience a gradual change of the cross wind component.
- b) During climb, the reduced air density above the inversion layer will cause a certain decrease in the aircraft performance (i.e. lift and thrust) and the pilot will experience a sudden improvement of visibility.
- c) During climb, the pilot of an aircraft probably will experience a slight deterioration of flight visibility when breaking through the top of the inversion layer and the general aircraft performance will decrease.
- d) The pilot of an aircraft probably will experience a gradual increase of the cross wind component and a gradual improvement of flight visibility when breaking through the base of the inversion layer during descent.

**04. Select the air traffic service in charge of control of local traffic, take-offs and landings at an airport.**

- a) Control
- b) Radar
- c) Air Traffic Centre
- d) Tower

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## 05. Evacuation slide normal inflation is achieved by:

- a) A pressurised gas canister.
- b) Pressurized air from the air conditioning system.
- c) A manual pump, used when needed by the cabin crew.
- d) The Aircraft's General Pneumatic Circuit.

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## 06. During initiation of a turn with speedbrakes extended, the roll spoiler function induces a spoiler deflection:

- a) Upward on the upgoing wing and downward on the downgoing wing.
- b) Downward on the upgoing wing and upward on the downgoing wing.
- c) On the downgoing wing only.
- d) On the upgoing wing only.

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## 07. According to PART-CAT, which one of the following statements concerning the landing distance for a turbojet aeroplane is correct?

- a) When determining the maximum allowable landing mass at destination, 60% of the available landing runway length should be taken into account.
- b) The landing distance is the distance from 35 ft above the surface of the runway to the full stop.
- c) Malfunctioning of an anti-skid system has no effect on the required runway length.
- d) Reverse thrust is one of the factors always taken into account when determining the landing distance required.

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## 08. If the take-off mass of an aeroplane is tyre speed limited, downhill slope would:

- a) Have no effect on the maximum mass for take-off
- b) Increase the required take-off distance
- c) Increase the maximum mass for take-off
- d) Decrease the maximum mass for take-off

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## 09. What will happen in ground effect?

- a) The wing tip vortices increase in strength
- b) The wing downwash on the tail surfaces increases
- c) The thrust required will increase significantly
- d) The induced angle of attack and induced drag decrease

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**10. Precipitation in the form of showers occurs from**

- a) Stratified clouds
- b) Convective clouds
- c) Clouds containing only ice crystals
- d) Cirro-type clouds

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**11. Considering the North Atlantic region between 30°N and 65°N together with the adjacent land areas during winter, the normal disposition of the main anticyclones at the surface is**

- a) Siberia, Iceland, Canaries
- b) NE Canada, Iceland
- c) Azores, USA High
- d) Greenland, Iberian peninsula

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

- 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

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**13. On a reciprocating engine aeroplane, with increasing altitude at constant gross mass, angle of attack and configuration the power required:**

- a) Decreases slightly because of the lower air density
- b) Increases but TAS remains constant
- c) Remains unchanged but the TAS increases
- d) Increases and the TAS increases by the same percentage

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**14. When compared to still air conditions, a constant headwind component:**

- a) Increases the best rate of climb
- b) Decreases the angle of climb
- c) Increases the angle of flight path during climb
- d) Increases the maximum endurance

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## 15. Select the letter code for HB-FBO.

- a) Hotel Bravo Fox Roma Olka
- b) Hotel Bravo Fox-trot Bravo Oscar
- c) Hotel Bravo Foxy Romeo Oscar
- d) Hector Brasil Fox-trot Romeo Oscar

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## 16. OPS 1 establishes that, a co-pilot is not assigned to operate at the flight controls during take-off and landing unless:

- a) He has carried out as pilot-in-command or as co-pilot at least three take-off and three landings in an aeroplane or an approved flight simulator of the type used, in the preceding 90 days.
- b) He has operated as pilot-in-command or as co-pilot at the controls during take-off and landing of the type to be used in the preceding 90 days.
- c) He has carried out as pilot-in-command or as co-pilot at least three take-off and three landings in an aeroplane or an approved flight simulator of the type used, in the preceding 30 days
- d) He has carried out at least three flights as pilot-in-command or as a co-pilot at the controls of the type to be used, in the preceding 90 days.

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## 17. Considering a stabilised platform inertial system: 1) The rate gyros and the accelerometers are mounted on the same platform. 2) The rate gyros and the accelerometers are mounted on two separated platforms. 3) The principle of operation requires at least 2 rate gyros. 4) The principle of operation requires at least 2 accelerometers. The combination that regroups all of the correct statements is:

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

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## 18. Please check the following statements: 1. Psychosomatic means that mental and/or emotional stressors can be manifested in organic stress reactions. 2. Psychosomatic means that a physical problem is always followed by psychological stress.

- a) 1 is correct, 2 is false
- b) 1 and 2 are both false
- c) 1 is false, 2 is correct
- d) 1 and 2 are both correct

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## 19. What effect has a tailwind on the maximum endurance speed?

- a) No effect
- b) The IAS will be decreased
- c) The IAS will be increased
- d) Tailwind only effects holding speed

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## 20. Under icing conditions, if you exceeded the holdover time, the correct procedure is:

- a) Apply directly anti-icing fluid without previous de-icing.
- b) De-ice again the aeroplane, then apply anti-icing fluid.
- c) De-ice the aeroplane.
- d) Operate the aeroplane de-icing/anti-icing systems.

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## 21. Which of these statements about the wing structure is correct?

- a) A torsion box is formed by wing spars, ribs and wing skin reinforced by stringers.
- b) The slats are a part of the torsion box.
- c) A semi-monocoque structure consists of the skin and frames.
- d) A Wing Main Spar Consists Of A Web With Stringers.

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## 22. An aeroplane is to depart from an airfield at a take-off mass of 302550 kg. Fuel on board at take-off (including contingency and alternate of 19450 kg) is 121450 kg. The Dry Operating Mass is 161450 kg. The useful load will be

- a) 19650 kg
- b) 141100 kg
- c) 39105 kg
- d) 121450 kg

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## 23. A Lambert conformal conic chart has a constant of the cone of 0.80. A straight line course drawn on this chart from A (53°N 004°W) to B is 080° at A

- a) Course at B is 092°(T). What is the longitude of B?
- b) 009°36'E
- c) 011°E
- d) 019°E

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**24. Given: Magnetic heading 311° Drift angle 10° left Relative bearing of NDB 270° What is the magnetic bearing of the NDB measured from the aircraft?**

- a) 211°
- b) 208°
- c) 180°
- d) 221°

**25. What is the change in longitude (in degrees and minutes) from A (45°N 165°30'E) to B (45°N 155°40'W)?**

- a) 38°50'E
- b) 38°50'W
- c) 38°05'W
- d) 38°05'E

**26. What is the average track (°M) and distance between KER NDB (N5210.9 W00931. 5) and CRN NDB (N5318.1 W00856. 5)?**

- a) 9L - 105 kt
- b) 10L - 104 kt
- c) 8R - 104 kt
- d) 9R - 108 kt

**27. Which word or phrase shall be used in order to repeat for clarity or emphasis?**

- a) Confirm
- b) Read back
- c) I say again
- d) Verify

**28. Which is the frequency band containing frequencies of the Aeronautical Mobile Service?**

- a) 108.000 - 117.975 MHz
- b) 1810 - 2850 KHz
- c) 118.000 - 136.975 MHZ
- d) 11650 - 13200 KHz

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## 29. The Bora is a

- a) Squally warm katabatic wind which occurs mainly in summer
- b) Cold katabatic wind with gusts associated with a maritime air mass
- c) Cold katabatic wind with the possibility of violent gusts
- d) Cold katabatic wind always associated with clouds and heavy showers

## 30. The rate of climb:

- a) Is angle of climb times true airspeed
- b) Is the downhill component of the true airspeed
- c) Is the horizontal component of the true airspeed
- d) Is approximately climb gradient times true airspeed divided by 100

## 31. . When has the centre of gravity to be computed?

- a) At least every four years
- b) After every 400-hrs inspection
- c) During every yearly inspection
- d) Prior to every flight

## 32. In an on-board computer, the software is

- a) Loaded From A Hard Disk
- b) Loaded from a floppy disk
- c) Resident in a random access memory (RAM)
- d) Resident in a read-only memory (eprom, eeprom,...)

## 33. An aircraft is squawking 7600. This indicates:

- a) It is diverting to the alternate aerodrome
- b) It is requesting immediate level change
- c) It is unable to establish communication due to radio equipment failure
- d) It is about to make a forced landing

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**34. Which statement, in relation to the climb limited takeoff mass of a jet aeroplane, is correct?**

- a) The climb limited takeoff mass is determined at the speed for best rate of climb
- b) The climb limited takeoff mass decreases with increasing OAT
- c) On high elevation airports equipped with long runways the aeroplane will always be climb limited
- d) 50% of a head wind is taken into account when determining the climb limited takeoff mass

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

- a) Leave controlled airspace and continue the flight within uncontrolled airspace
- b) Continue to fly in VMC, land at the nearest suitable aerodrome, report its arrival
- c) Continue the flight to destination aerodrome in any case
- d) Squawk IDENT and proceed to the alternate aerodrome

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**36. The landing field length required for jet aeroplanes at the alternate (wet condition) is the demonstrated landing distance plus**

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

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**37. 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° right. True track is ?**

- a) 242°
- b) 224°
- c) 262°
- d) 280°

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**38. If an abortive start (hung start) occurs when starting a gas turbine engine, the correct action is to:**

- a) Shut down the engine.
- b) Activate both igniter systems.
- c) Move the thrust lever forward to increase fuel flow.
- d) Select The Other Igniter System.



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## 39. Which statement is correct ?

- a) Oxygen diffusion from the blood into the cells depends on the partial oxygen pressure gradient.
- b) Oxygen diffusion from the lungs into the blood does not depend on partial oxygen pressure.
- c) The gradient of diffusion is higher at altitude than it is at sea-level.
- d) Oxygen is mainly transported in plasma.

## 40. An airplane is in steady cruise at flight level 290. The auto-throttle maintains a constant Mach number. If the total temperature increases, the calibrated airspeed:

- a) Increases.
- b) Remains constant.
- c) Increases if the static temperature is higher than the standard temperature, decreases if lower.
- d) Decreases.

## 41. By what percentage does VA (EAS) alter when the aeroplane's weight decreases by 19%?

- a) 10% lower.
- b) 19% lower.
- c) No change
- d) 4.36% lower.

## 42. Cabin altitude means the:

- a) Difference In Height Between The Cabin Floor And Ceiling.
- b) Cabin pressure expressed as altitude.
- c) Flight level altitude at maximum differential pressure.
- d) Flight Level The Aircraft Is Flying At.

## 43. Which one of the following lists information given by a basic VOR / DME-based Area Navigation System?

- a) Crosstrack distance
- b) alongtrack distance
- c) angular course deviation
- d) 2500 MHz

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**44. Flight planning chart for an aircraft states, that the time to reach the cruising level at a given gross mass is 36 min and the distance travelled is 157 NM (zero-wind). What will be the distance travelled with an average tailwind component of 60 KT?**

- a) 128 NM
- b) 193 NM
- c) 228 NM
- d) 157 NM

**45. During sustained positive G-forces the order of symptoms you can expect is:**

- a) Grey-out, tunnel vision, black-out and unconsciousness.
- b) Grey-out, unconsciousness, black-out and tunnel vision.
- c) Black-out, grey-out, tunnel vision and unconsciousness.
- d) Unconsciousness, black-out, tunnel vision and grey out.

**46. QFE is the RTF Q-code to indicate:**

- a) The atmospheric pressure corrected to the aircraft cockpit height
- b) The atmospheric pressure referred to the highest fixed obstacle located on the surface of an aerodrome
- c) The altimeter sub-scale setting to obtain the flight level reference datum
- d) The atmospheric pressure at aerodrome elevation (or at runway threshold)

**47. 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.

**48. Astronomic precession:**

- a) Causes an apparent spin of heading gy ro to the left in the southern hemisphere
- b) Is zero at the South pole
- c) Is zero at the North pole
- d) Causes an apparent spin of heading gyro to the right in the southern hemisphere

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## 49. When and where is an easterly jet stream likely to be encountered ?

- a) In winter along the Russian coast facing the Arctic ocean.
- b) In summer from South-East Asia extending over Southern India to central Africa.
- c) Throughout the year to the south of the Azores high.
- d) In summer from the Middle East extending over the southern part of the Mediterranean to Southern Spain.

## 50. 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) Land at the nearest airport without an ATC unit
- d) Attempt to establish contact with the station on an alternative frequency

## 51. Where is the coldest air to be found, in an occlusion with cold front characteristics?

- a) Ahead of the front.
- b) Behind the front.
- c) At the junction of the occlusion.
- d) At the surface position of the front.

## 52. Minimum time route is a route calculated for:

- a) A given flight from departure to destination
- b) Aircraft flying in MNPS airspace
- c) A period of 24 hours
- d) A period of 12 hours

## 53. A vibration indicator receives a signal from different sensors (accelerometers). It indicates the:

- a) Acceleration measured by the sensors, expressed in g
- b) Vibration amplitude at a given frequency
- c) Vibration period expressed in seconds
- d) Vibration frequency expressed in Hz



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**54. An aeroplane whose maximum approved passenger seating configuration is 501 to 600 seats must be equipped with at least:**

- a) 6 Hand Fire-extinguishers Conveniently Located In The Passenger Compartment.
- b) 7 hand fire-extinguishers conveniently located in the passenger compartment.
- c) 8 hand fire-extinguishers conveniently located in the passenger compartment.
- d) 5 Hand Fire-extinguishers Conveniently Located In The Passenger Compartment.

**55. When taking-off after a widebody aircraft which has just landed, you should take-off:**

- a) In front of the point where the aircraft's wheels have touched down.
- b) Beyond the point where the aircraft's wheels have touched down.
- c) At the point where the aircraft's wheels have touched the ground and on the underwind side of the runway .
- d) At the point where the aircraft's wheels have touched down and on the wind side of the runway .

**56. Decision making in emergency situations requires firstly:**

- a) Speed of reaction
- b) Delegation of tasks and crew coordination
- c) The whole crew to focus on the problem
- d) Informing ATC thoroughly about the situation

**57. A pilot is required to read back the following ATC message:**

- a) Altimeter settings, airways clearances, SSR operating instructions, level instructions and any messages when requested by AT
- b) Altimeter settings, weather information, information regarding the proximity of other aircraft and taxi instructions.
- c) Altimeter settings, weather information, information regarding the proximity of other aircraft and taxi instructions. altimeter settings, taxi instructions takeoff clearances, weather information and any other information given by AT
- d) Altimeter settings, weather information, airways clearances, information regarding the proximity of other aircraft and taxi instructions.

**58. Which of the following statements is/are correct?1. REM-sleep becomes shorter with any repeated sleep cycle during the night.2. REM-sleep is more important for the regeneration of mental functions than all the other sleep stages are.**

- a) 1 is false, 2 is correct
- b) 1 and 2 are false
- c) 1 is correct, 2 is false
- d) 1 and 2 are both correct

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## 59. The amplitude modulation and the colour of an outer marker (OM) is:

- a) 3000 Hz, blue
- b) 400 Hz, blue
- c) 400 Hz, amber
- d) DME callsign was not transmitted, the distance information is sufficient proof of correct operation

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## 60. The changes in atmospheric gas pressure with altitude are:

- a) Non-linear, with a higher rate of change at lower levels
- b) Decreases more slowly at lower altitudes compared with at higher levels
- c) Decreases in a linear manner with altitude
- d) Rises with altitude

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## 61. The validity of the instrument rating (IR) is:

- a) 5 years
- b) 6 months
- c) 2 years
- d) 1 year

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## 62. Approach Procedures - Circling

The term used to describe the visual phase of flight after completing an instrument approach, to bring an aircraft into position for landing on a runway which is not suitably located for straight-in approach, is:

- a) Visual manoeuvring (circling).
- b) Aerodrome traffic pattern.
- c) Contact approach.
- d) Visual approach.

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## 63. In relation to the net take-off flight path, the required 35 ft vertical distance to clear all obstacles is:

- a) Based on pressure altitudes
- b) The minimum vertical distance between the lowest part of the aeroplane and all obstacles within the obstacle domain
- c) The height at which power is reduced to maximum climb thrust
- d) The height by which acceleration and flap retraction should be completed

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**64. Almanac data stored in the receiver of the satellite navigation system NAVSTAR/GPS is used for the:**

- a) Recognition whether Selective Availability (SA) is operative
- b) Fast identification of received signals coming from visible satellites
- c) Correction of receiver clock error
- d) 300°(M)

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**65. VNO is the maximum speed:**

- a) Which must never be exceeded.
- b) Not to be exceeded except in still air and with caution.
- c) With flaps extended in landing position.
- d) At which the flight controls can be fully deflected.

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**66. If Paris reports a wind of 30012KT on the METAR, what wind velocity would you expect to encounter at a height of 2000 feet above the ground ?**

- a) 33025KT
- b) 23030KT
- c) 27020KT
- d) 30025KT

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**67. In which zone of a polar front jet stream is the strongest CAT to be expected ?**

- a) On the tropical air side of the core.
- b) Exactly in the centre of the core.
- c) On the polar air side of the core.
- d) About 12000 FT above the core.

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**68. The 'Standards' contained in the Annexes to the Chicago convention are to be considered:**

- a) Advice and guidance for the aviation legislation within the member states
- b) Binding for the member states that have not notified ICAO about a national difference
- c) Binding for all air line companies with international traffic
- d) Binding for all member states

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**69. You are making a long straight in approach to land, at what range would you make the call "LONG FINAL"?**

- a) 3 NM
- b) 2 NM
- c) 4 NM
- d) Between 8 and 4 NM

**70. 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.

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## Schema Risposte

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

01: C

02: B

03: B

04: D

05: A

06: B

07: A

08: A

09: D

10: B

11: C

12: A

13: D

14: C

15: B

16: A

17: C

18: A

19: A

20: B

21: A

22: B

23: B

24: D

25: A

26: C

27: C

28: C

29: C

30: D

31: D

32: D

33: C

34: B

35: B

36: A

37: D

38: A

39: A

40: B

41: A

42: B

43: A

44: B

45: A

46: D

47: C

48: A

49: B

50: D

51: B

52: A

53: B

54: B

55: B

56: B

57: A

58: A

59: B

60: A

61: D

62: A

63: B

64: B

65: B

66: A

67: C

68: B

69: D

70: A