

Simulazione di Esame

Aircraft General Knowledge - Instrumentation - ATPL - Airline Transport Pilot license, 70 domande in 70 minuti!



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NOME ALLIEVO:

DATA & ORA:

01. Which one of the following is an advantages of a multi-sensor system using inputs from a global navigation satellite system (GNSS) and an inertial navigational system (INS)?

- a) The average position calculated from data provided by both systems increases overall accuracy
- b) The activation of 'Selective Availability' can be recognised by the INS
- c) The only advantage of coupling both systems is double redundancy
- d) 18

02. If Paris reports a wind of 16020KT on the METAR, what wind velocity would you expect to encounter at a height of 2000 feet above the ground?

- a) 14020KT
- b) 16030KT
- c) 17015KT
- d) 19040KT

03. The principle of the Schuler pendulum is used in the design of a:

- a) Strapdown inertial system.
- b) Artificial horizon control system.
- c) Directional gyro control system.
- d) Stabilised platform inertial system.

04. The aircraft has started a descent. Select the correct radiotelephony transmission:

- a) LEAVING FL 200
- b) LEAVING LEVEL 200 FOR LEVEL 120
- c) LEAVING FL 200, DESCENDING TO FL 120
- d) STARTING DESCENT

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05. A thermocouple type thermometer consists of:

- a) Two metal conductors of different type connected at two points.
- b) A single-wire metal winding.
- c) A Wheatstone bridge connected to a voltage indicator.
- d) Two metal conductors of the same type connected at two points.

06. The centre of gravity location of the aeroplane is normally computed along the:

- a) Longitudinal axis.
- b) Horizontal axis.
- c) Lateral axis.
- d) Vertical axis.

07. The duration of the period of currency of a medical assessment shall begin on the date:

- a) The licence is issued or validated
- b) The medical assessment is issued
- c) The licence is delivered to the pilot
- d) The licence is issued or renewed

08. Regarding take-off, the take-off decision speed V1:

- a) Is the airspeed on the ground at which the pilot is assumed to have made a decision to continue or discontinue the take-off.
- b) Is the airspeed of the aeroplane upon reaching 35 feet above the take-off surface.
- c) Is an airspeed at which the aeroplane is airborne but below 35 ft and the pilot is assumed to have made a decision to continue or discontinue the take-off .
- d) Is always equal to VEF (Engine Failure speed).

09. An aircraft making a radar approach should be directed to consider executing a missed approach if the aircraft is not visible on the radar display for any significant interval during the:

- a) Last 4 NM of the approach
- b) Last 3 NM of the approach
- c) Last 2 NM of the approach
- d) Last 5 NM of the approach

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10. A super-cooled droplet is:

- a) A water droplet that is mainly frozen
- b) A small particle of water at a temperature below -50°C
- c) A droplet still in liquid state at a temperature below 0°C
- d) A water droplet that has been frozen during its descent

11. Free running circadian rhythms normally have a cycle of approximately:

- a) 25 hours
- b) 36 hours
- c) 8 hours
- d) 6 hours

12. When filling in an ATC flight plan before departure, the time information which should be entered in item 13: 'Time' is:

- a) Planned take-off time.
- b) Estimated off-block time.
- c) The time of flight plan filing.
- d) Planned engine start time.

13. The lowest cloud conditions (oktas/ft) at BORDEAUX/MERIGNAC at 1330 UTC were

- a) 1 to 4 at 3000
- b) 3 to 4 at 2000
- c) 1 to 2 at 3000
- d) 3 to 4 at 800[see Annex]

14. Your aircraft is heading 075°M . The OBI is set to 025° . The VOR indications are 'TO' with the needle showing right deflection. Relative to the stations, you are situated in a quadrant defined by the radials:

- a) 025° and 115°
- b) 295° and 025°
- c) 115° and 205°
- d) 2.5°

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15. What does QTE mean?

- a) True heading to the station (no wind).
- b) Magnetic bearing from the station.
- c) Magnetic heading to the station.
- d) True bearing from the station.

16. Which frequency shall be used for the first transmission of an urgency call:

- a) The regional guard frequency
- b) The international emergency frequency
- c) Any frequency at pilot's discretion
- d) The air-ground frequency in use at the time

17. Which gas most readily combines with haemoglobin?

- a) Nitrogen
- b) Carbon monoxide
- c) Carbon dioxide
- d) Oxygen

18. Given waypoint 1: 60°S 030°W and waypoint 2: 60°S 020°W, which have been inserted into INS connected to an autopilot, what will be the approximate latitude show on the display at longitude 025°W?

- a) 60°11'S
- b) 60°00'S
- c) 60°06'S
- d) 59°49'S

19. 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

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20. . The mass of an item multiplied by it's distance from the datum is it's

- a) Moment
- b) Force
- c) Moment arm
- d) Centre of gravity

21. An aircraft airworthiness certificate states a maximum of eight occupants (including pilot). The pilot has a passenger load of six adults and two children (5 and 6 years old).The boarding of all passengers is:

- a) Authorized, providing both children are sitting on the same seat and using the same seat belt. No other particular precautions are necessary.
- b) Forbidden.
- c) Authorized, providing both children are of a similar stature, sitting on the same seat and using the same seat belt with an adult sitting on the seat next to them in order to release their seat belt.
- d) Authorized, providing both children are sitting on the same seat, using the same seat belt with an adult sitting on the seat next to them, in order to release their seat belt if necessary.

22. Which word or phrase shall be used when giving authorization to proceed under specified conditions?

- a) Approved
- b) Go ahead
- c) I say again: proceed
- d) Cleared

23. In a compensated capacitance type quantity indicating system, the contents gauge of a half- full fuel tank indicates a fuel mass of 8000 lIf a temperature rise increased the volume of fuel by 5%, the indicated fuel weight would:

- a) Increase By 5%
- b) Decrease by 5%
- c) Remain the same
- d) Increase By 10%

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24. For a planned flight the calculated fuel is as follows: Flight time: 2h42minThe reserve fuel, at any time, should not be less than 30% of the remaining trip fuel. Taxi fuel: 9 kgBlock fuel: 136 kgHow much fuel should remain after 2 hours flight time?

- a) 33 kg trip fuel and 10 kg reserve fuel.
- b) 25 kg trip fuel and 8 kg reserve fuel.
- c) 33 kg trip fuel and no reserve fuel.
- d) 23 kg trip fuel and 10 kg reserve fuel.

25. Oxygen, combined with haemoglobin in blood is transported by

- a) Platelets
- b) Blood plasma
- c) Red blood cells
- d) White blood cells

26. A pilot can overcome hyperventilation by:

- a) Increasing the rate and depth of breathing to eliminate harmful carbon dioxide
- b) Depending on instruments
- c) The use of drugs stabilizing blood pressure
- d) Controlling the rate and depth of breathing and/or breathing into a bag

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

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

28. Approach procedures - Final approach segment - precision approach - ILSThe ILS obstacle clearance surfaces assume that the pilot does not normally deviate from the centreline more than:

- a) One full scale deflection after being established on the track.
- b) Half a scale deflection after being established on the track.
- c) One and a half of a scale deflection after being established on the track.
- d) A quarter of a scale deflection after being established on the track.

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29. The International Date Line is located:

- a) At the apparent sun's anti meridian.
- b) At the 180° E/W meridian, or in the vicinity of this meridian.
- c) At latitudes on the 180° E/W meridian.
- d) At the Greenwich meridian.

30. During the approach, a crew reads on the radio altimeter the value of 650 ft. This is an indication of the true:

- a) Height of the lowest wheels with regard to the ground at any time.
- b) Altitude of the aircraft.
- c) Height of the aircraft with regard to the runway.
- d) Height of the aircraft with regard to the ground at any time.

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

- 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.

32. Trailing edge flap extension will:

- a) Increase the critical angle of attack and increase the value of CLmax
- b) Decrease the critical angle of attack and decrease the value of CLmax
- c) Decrease the critical angle of attack and increase the value of CLmax
- d) Increase the critical angle of attack and decrease the value of CLmax

33. On a swept wing aeroplane at low airspeed, the 'pitch up' phenomenon:

- a) Is caused by wingtip stall
- b) Is caused by boundary layer fences mounted on the wings
- c) Is caused by extension of trailing edge lift augmentation devices
- d) Never occurs, since a swept wing is a 'remedy' to pitch up

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34. The relationship between the stall speed V_S and V_A (EAS) for a large transport aeroplane can be expressed in the following formula:(SQRT= square root)

- a) V_A
- b) $V_A > V_S \text{ SQRT}(2.5)$
- c) V_A
- d) $V_A \geq V_S \text{ SQRT}(2.5)$

35. The normal sleep cycle is approximately everyminutes

- a) 120
- b) 60
- c) 180
- d) 90

36. An aeroplane accelerates from 80 KT to 160 KT at a load factor equal to 1. The induced drag coefficient (i) and the induced drag (ii) alter with the following factors:

- a) (i) $1/2$ (ii) $1/16$
- b) (i) $1/4$ (ii) 2
- c) (i) 4 (ii) $1/2$
- d) (i) $1/16$ (ii) $1/4$

37. The dry atmosphere of the flight deck may cause dehydration, which may lead to a reduction in the ability to pay attention. To prevent this, it is appropriate to:

- a) Drink plenty of coffee
- b) Drink cool cola drinks
- c) Drink sufficient non-carbonated liquids
- d) Drink tea

38. 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.

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

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39. The part(s) of the eye responsible for night vision:

- a) Are rods and cones
- b) Are the cones
- c) Is the cornea
- d) Are the rods

40. When considering the effects of increased mass on an aeroplane, which of the following is true?

- a) Flight endurance will be increased.
- b) Stalling speeds will be higher.
- c) Gradient of climb for a given power setting will be higher.
- d) Stalling speeds will be lower.

41. The main reason that day and night, throughout the year, have different duration, is due to the:

- a) Inclination of the ecliptic to the equator
- b) Gravitational effect of the Sun and Moon on the speed of rotation of the Earth
- c) Relative speed of the Sun along the ecliptic
- d) Earth's rotation

42. What is the correct call sign of Fastair 345 in the initial call to the aerodrome control tower and the approach control unit, if the aircraft has a maximum take-off weight of more than 136 tonnes:

- a) Fastair 345 heavy
- b) Fastair 345 widebody
- c) Fastair 345
- d) Heavy Fastair 345

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

- 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) Aeroplane is circling around the station

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44. For a non pressurised aircraft, 100% of passengers shall be supplied with supplemental oxygen during:

- a) The entire flight time after 30 minutes at pressure altitudes greater than 10 000 ft but not exceeding 13 000 ft
- b) The entire flight time at pressure altitudes above 10 000 ft
- c) The entire flight time at pressure altitudes above 13 000 ft and for any period exceeding 30 minutes at pressure altitudes above 10 000 ft but not exceeding 13 000 ft
- d) The entire flight time at pressure altitudes above 13 000 ft

45. Refer to the Student Pilot Route Manual - VFR Chart ED-4Flying VFR from VILLINGEN (48°03.5'N, 008°27.0'E) to FREUDENSTADT (48°28.0'N, 008°24.0'E). Determine the minimum altitude within a corridor 5 NM left and 5 NM right of the course line in order to stay 1000' clear of obstacles.

- a) 4300 ft
- b) 1500 ft
- c) FL045
- d) 3300 ft

46. Which of the following errors is associated with the use of VOR?

- a) Coastal refraction.
- b) Scalloping.
- c) Night effect.
- d) Quadrantal error.

47. In the NAVSTAR/GPS satellite navigation system, re-use of Selective Availability would give the option to artificially degrade the accuracy by:

- a) Shutting off selected satellites
- b) Dithering the satellite clock
- c) Offsetting satellite atomic clocks by a predetermined constant amount
- d) Radio communication failure

48. Shall an ATC route clearance always be read back:

- a) No, if the communication channel is overloaded
- b) No, if the ATC route clearance is transmitted in a published form (e.g. Standard Instrument Departure Route/SID)
- c) No, if the content of the ATC clearance is clear and no confusion is likely to arise
- d) Yes, unless authorized otherwise by ATS authority concerned

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49. A straight line on a Lambert Conformal Projection chart for normal flight planning purposes:

- a) Is approximately a Great Circle
- b) Can only be a parallel of latitude
- c) Is a Rhumb line
- d) Is a Loxodromic line

50. The first step for an individual's cure of alcoholism is:

- a) The admission that he/she is an alcoholic and a willingness to accept treatment
- b) A complete abstinence from alcohol
- c) Cutting down on the consumption of alcohol
- d) Counselling

51. What is the radiotelephony call sign for the aeronautical station indicating area control centre (no radar)?

- a) ...CONTROL
- b) ...RADAR
- c) ...APPROACH
- d) ...CENTRE

52. What can be the consequence during a descent with a fully open throttle if the waste gate is seized ?

- a) The Power Of The Motor Will Decrease.
- b) The turbine shaft will break.
- c) The manifold air pressure (MAP) value may exceed the maximum allowed value.
- d) The Turbine Blades Will Separate.

53. On the ground, during a right turn, the turn indicator indicates:

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

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54. For an aeroplane with a tyre pressure of 12 bars, there is a risk of dynamic hydroplaning as soon as the:

- a) Water depth is equal to the half of the depth of the tyre grooves.
- b) Speed is greater than 83 kt.
- c) Speed is greater than 119 kt.
- d) Cross wind is greater than 10 kt.

55. One of the main characteristics of windshear is that it:

- a) Occurs only at a low altitude (2000 ft) and never in the vertical plane
- b) Occurs only at a low altitude (2000 ft) and never in the horizontal plane
- c) Can occur at any altitude in both the vertical and horizontal planes
- d) Can occur at any altitude and only in the horizontal plane

56. The operating principle of the vertical speed indicator (VSI) is based on the measurement of the rate of change of:

- a) Dynamic pressure
- b) Static pressure
- c) Kinetic pressure
- d) Total pressure

57. The centre of gravity of an aircraft

- 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.

58. Assuming ISA conditions, which statement with respect to the climb is correct ?

- a) At constant Mach number the IAS increases
- b) At constant IAS the TAS decreases
- c) At constant TAS the Mach number decreases
- d) At constant IAS the Mach number increases

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59. An aeroplane whose maximum approved passenger seating configuration is greater than 60 seats must be equipped (including flight deck) with at least:

- a) 2 HALON 1211 fire-extinguishers or equivalent.
- b) 3 HALON 1211 fire-extinguishers or equivalent.
- c) 1 HALON 1211 fire-extinguisher or equivalent.
- d) 4 HALON 1211 fire-extinguishers or equivalent.

60. Under anticyclone conditions in the northern hemisphere, with curved isobars the speed of the gradient wind is

- a) The same as the thermal component
- b) Less than the geostrophic wind
- c) Proportional only to the Coriolis force
- d) Greater than the geostrophic wind

61. On a given path, it is possible to choose between four flight levels (FL), each associated with a mandatory flight Mach Number (M). The flight conditions, static air temperature (SAT) and headwind component (HWC) are given below: FL 370 - M = 0.80 Ts = -60°C HWC = -15 kt FL 330 - M = 0.78 Ts = -60°C HWC = -5 kt FL 290 - M = 0.80 Ts = -55°C HWC = -15 kt FL 270 - M = 0.76 Ts = -43°C HWC = 0 The flight level allowing the highest ground speed is:

- a) FL290
- b) FL270
- c) FL370
- d) FL330

62. If no meteorological information is available for the destination, the operator must:

- a) Not take-off until obtaining destination meteorological forecast.
- b) Take extra fuel to fly two hours at holding speed.
- c) Select two destination alternates.
- d) Take extra fuel to fly one hour at holding speed, 1.500 ft above the alternate aerodrome.

63. On a polar stereographic chart whose grid is parallel with the Greenwich meridian in the direction of the true North pole, the 'true' orientation of the great circle linking point 62N 010E to point 66N 050W is 305. The grid route at the starting point of this great circle is:

- a) 301
- b) 298
- c) 292
- d) 295

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64. What is (are) the damping element(s) in a landing gear shock absorber used on larger aircraft?

- a) Oxygen.
- b) Nitrogen.
- c) Springs.
- d) Nitrogen and a viscous liquid.

65. A jet aeroplane equipped with old engines has a specific fuel consumption of 0.06 kg per Newton of thrust and per hour and, in a given flying condition, a fuel consumption of 14 kg per NM. In the same flying conditions, the same aeroplane equipped with modern engines with a specific fuel consumption of 0.035 kg per Newton of thrust and per hour, has a fuel consumption per NM of:

- a) 11.7 kg / NM
- b) 14 kg / NM
- c) 10.7 kg / NM
- d) 8.17 kg / NM

66. The main task of the user segment (receiver) of the satellite navigation system NAVSTAR/GPS is to:

- a) Transmit signals which, from the time taken, are used to determine the distance to the satellite
- b) To monitor the status of the satellites, determine their positions and to measure the time
- c) Select appropriate satellites automatically, to track the signals and to measure the time taken by signals from the satellites to reach the receiver
- d) WGS 84

67. An aircraft at position 27°00'N 170°00'W travels 3000 km on a track of 180° (T), then 3000 km on a track of 090° (T), then 3000 km on a track of 000° (T), then 3000 km on a track of 270° (T). What is its final position?

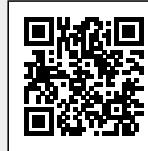
- a) 27°00'N 170°00'W
- b) 27°00'N 173°18'W
- c) 00°00'N/S 170°00'W
- d) 27°00'N 143°00'W

68. What does the abbreviation 'H24' mean?

- a) Sunrise to sunset
- b) Continuous day and night service
- c) No specific working hours
- d) Sunset to sunrise

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69. When a LIGHT aircraft is landing behind a MEDIUM aircraft, the wake turbulence non-radar minimum time approach separation, according to DOC 4444 (ICAO), shall be:

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

70. The wing ice protection system currently used for most large turboprop transport aeroplanes is a(n):

- a) Electrical De-icing System.
- b) Hot air system.
- c) Pneumatic system with inflatable boots.
- d) Liquid De-icing System.

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Schema Risposte

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

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