

# 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. An aircraft at FL370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL130. If the mean GS for the descent is 288 KT, the minimum rate of descent required is:**

- a) 960 fpm
- b) 920 fpm
- c) 890 fpm
- d) 860 fpm

**02. Which phenomenon is counteracted with differential aileron deflection?**

- a) Aileron reversal.
- b) Sensitivity for spiral dive.
- c) Adverse yaw.
- d) Turn co-ordination.

**03. An airborne weather radar installation makes it possible to detect the location of**

- a) Zones of precipitation, particularly liquid-state precipitation, and also their intensity
- b) Stratocumulus and its vertical development
- c) Cumulonimbus, but provided that cloud of this type is accompanied by falls of hail
- d) All clouds

**04. What does the term 'blind transmission' mean?**

- a) A transmission of information relating to air navigation that is not addressed to a specific station or stations.
- b) A transmission from one station to another station in circumstances where two-way communication cannot be established but it is believed that the called station is able to receive the transmission.
- c) A transmission where no reply is required from the receiving station.
- d) A transmission of messages relating to en-route weather information which may affect the safety of aircraft operations that is not addressed to a specific station or stations.

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**05. For a given configuration, the stall speed of an aeroplane will be highest when loaded:**

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- a) To the maximum allowable mass with the most forward CG
- b) To the maximum allowable mass with the most aft CG
- c) To a low total mass with the most aft CG
- d) To a low total mass with the most forward CG

**06. Refer to the Student Pilot Route Manual - 5 AT (HI) The initial great circle course from position A (80°00'N 170°00'E) to position B (75°00'N 011°E) is 177° (G). The final grid course at position B will be:**

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- a) 172° (G)
- b) 194° (G)
- c) 353° (G)
- d) 177° (G)

**07. The actual 'Take-off Mass' is equivalent to:**

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- a) Actual Zero Fuel Mass plus the traffic load
- b) Dry Operating Mass plus the take-off fuel
- c) Dry Operating Mass plus take-off fuel and the traffic load
- d) Actual Landing Mass plus the take-off fuel

**08. 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) 255/25kt
- b) 257/35kt
- c) 265/30kt
- d) 260/30kt

**09. Refer to the General Student Pilot Route Manual - VFR Chart ED-4 Flying VFR from PEITING (47°48.0'N, 010°55.5'E) to IMMENSTADT (47°33.5'N, 010°13.0'E) determine the magnetic course.**

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- a) 257°
- b) 063°
- c) 077°
- d) 243°

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## 10. Longitudinal CG location can be expressed:

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- a) As a percentage of the MAC from its trailing edge.
- b) As a percentage of the MAC from its leading edge.
- c) With respect to the centre of pressure.
- d) With respect to the neutral point.

## 11. "Kilometer" is defined as:

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- a) The mean length of a 1/40 000 part of the equator.
- b) A 1/10 000 part of the meridian from the equator to the pole.
- c) 0,621 NM.
- d) 0,454 SM.

## 12. What will be the effect on an aeroplane's performance if aerodrome pressure altitude is decreased?

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- a) It will decrease the take-off distance required
- b) It will increase the accelerate stop distance
- c) It will increase the take-off ground run
- d) It will increase the take-off distance required

## 13. What is the aircraft track?

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- a) 272°(M)
- b) 280°(M)
- c) 260°(M)
- d) 300°(M)

## 14. Full scale deflection of the localiser needle indicates that the aircraft is approximately:

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- a) 5° offset from the localiser centreline.
- b) 1.25° offset from the localiser centreline.
- c) 2.5° offset from the localiser centreline.
- d) 10° offset from the localiser centreline.

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**15. A message concerning an aircraft being threatened by grave and imminent danger, requiring immediate assistance is called:**

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- a) Flight safety message.
- b) Distress message.
- c) Class B message.
- d) Urgency message.

**16. 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

**17. A leak in the pitot total pressure line of a non-pressurized aircraft to an airspeed indicator would cause it to:**

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- a) Over-read.
- b) Indication will drop to zero.
- c) Under-read.
- d) Freeze on the value it indicated at the time of failure.

**18. The force exactly opposing and balance lift in a glide descent is:**

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- a) Thrust x  $\sin(\text{angle of descent})$
- b) Weight x  $\sin(\text{angle of descent})$
- c) Weight x  $\cos(\text{angle of descent})$
- d) Thrust x  $\cos(\text{angle of descent})$

**19. For the purpose of completing the Mass and Balance documentation, the Operating Mass is considered to be Dry Operating Mass plus**

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- a) Ramp (Block) Fuel Mass.
- b) Trip Fuel Mass.
- c) Take-off Fuel Mass.
- d) Ramp Fuel Mass less the fuel for APU and run-up.

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**20. In accordance with JAR-OPS 1, on aeroplanes intended to be operated at pressure altitude above 25000 ft, the total number of oxygen dispensing units shall exceed the number of:**

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- a) Passengers by 10 %.
- b) Seats by 2 %.
- c) Seats by 10 %.
- d) Passengers by 2 %.

**21. Given: Distance from departure to destination: 3750 NM Endurance: 9,5 h True Track: 360 W/V: 360/50 TAS: 480 kt What is the distance of the PSR from the departure point?**

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- a) 2070 NM
- b) 2255 NM
- c) 1495 NM
- d) 1128 NM

**22. The purpose of a ditching control is to:**

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- a) Achieve Rapid Depressurisation.
- b) Open the outflow valve(s).
- c) Close the outflow valve(s).
- d) Direct Pressurisation Air To The Flotation Bags.

**23. In the event of communication failure in an MNPS (Minimum Navigation Performance Specification) airspace, the pilot must:**

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- a) Return to the flight plan route if it is different from the last oceanic clearance received and acknowledged.
- b) Join one of the so-called 'special' routes.
- c) Continue the flight in compliance with the last oceanic clearance received and acknowledged.
- d) Change the flight level in accordance with predetermined instructions.

**24. The following fuel consumption figures are given for a jet aeroplane: -standard taxi fuel: 600 kg.-average cruise consumption: 10 000 kg/h.-holding fuel consumption at 1500 ft above alternate airfield elevation: 8000 kg/h.-flight time from departure to destination: 6 hours-fuel for diversion to alternate: 10 200 kg. The minimum ramp fuel load is:**

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- a) 79 800 kg
- b) 74 800 kg
- c) 77 200 kg
- d) 77 800 kg

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## 25. Which of the following applies to carbon monoxide poisoning?

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- a) The human body shows no sign of carbon monoxide poisoning.
- b) Inhaling carbon monoxide leads to hyperventilation.
- c) Several days are needed to recuperate from a carbon monoxide poisoning.
- d) A very early symptom for realising carbon monoxide poisoning is euphoria.

## 26. A departing aircraft experiencing radio communication failure on an IFR flight under radar vectors has to:

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- a) Squawk 7600 and thereafter return to the route indicated in the current flight plan in the most direct manner
- b) Squawk 7600 and thereafter, regardless of any limitation instructed by ATC, return to the route indicated in the current flight plan on the shortest way
- c) Squawk 7600, maintain present heading for 1 minute and thereafter return to the route indicated in the current flight plan on the shortest way
- d) Squawk 7600 and maintain the heading last assigned by ATC for a period of 3 minutes and then return to the flight path in accordance with the current flight plan

## 27. The effect of the wing downwash on the static longitudinal stability of an aeroplane is:

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- a) Negligible
- b) Positive
- c) Negative
- d) Smallest at high values of the lift coefficient

## 28. The bow wave will first appear at:

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- a) A Mach number just below  $M = 1$
- b) Mach 1
- c) A Mach number just above  $M = 1$
- d) The critical Mach number

## 29. When the air is passing through a shock wave the static temperature will

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- a) Stay constant.
- b) Decrease.
- c) Decrease and beyond a certain Mach number start increasing again
- d) Increase.

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**30. Compared with an oblique shock wave at the same Mach number a normal shock wave has a**

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- a) Higher total pressure.
- b) Higher total temperature.
- c) Higher loss in total pressure.
- d) Lower static temperature.

**31. The geostrophic wind is less than the gradient wind around an anticyclone because the**

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- a) Centrifugal force opposes the pressure gradient
- b) Effect of coriolis is added to friction
- c) Centrifugal force is added to the pressure gradient
- d) Coriolis effect opposes the centrifugal force

**32. From the loading manual for the transport aeroplane, the aft cargo compartment has a maximum total load of:**

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- a) 9232 kg
- b) 1568 kg
- c) 4187 kg
- d) 3062 kg

**33. Refer to the Jeppesen General 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 magnetic course.**

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- a) 176°
- b) 355°
- c) 185°
- d) 004°

**34. . The centre of gravity is the**

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- a) Centre of thrust along the longitudinal axis, in relation to a datum line
- b) Point where all the aircraft mass is considered to be concentrated
- c) Neutral point along the longitudinal axis, in relation to a datum line
- d) Focus along the longitudinal axis, in relation to a datum line

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## 35. How shall a pilot ask for a QFE ?

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- a) Request Queen Fox Easy
- b) Request Quebec Foxtrot Echo
- c) Request Quebec Fox Echo
- d) Request Quebec Fox Easy

## 36. Which statement related to a take-off from a wet runway is correct?

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- a) A reduction of screen height is allowed in order to reduce weight penalties
- b) Screen height reduction can not be applied because of reduction in obstacle clearance
- c) In case of a reverser inoperative the wet runway performance information can still be used
- d) The use of a reduced Vr is sufficient to maintain the same safety margins as for a dry runway

## 37. The gas turbine illustrated is of the following type:

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- a) Free Turbine And Axial Compressor
- b) Single shaft turbine and centrifugal compressor
- c) Free turbine and centrifugal compressor
- d) Single Shaft Turbine And Axial Compressor

## 38. The reason for the fact that an aeroplane designed for long distances cannot simply be used for short haul flights at higher frequencies is that

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- a) These Aeroplanes Often Consume Too Much Fuel On Short Haul Flights.
- b) The procedures and checklists for this kind of aeroplanes will take too much time
- c) In that case some fuel tanks remain empty during the whole flight, which stresses the aeroplane's structure in an unacceptable way
- d) The lifetime of the fatigue sensitive parts has been based on a determined load spectrum

## 39. Max. Exhaust Gas Temperature is theoretically associated with:

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- a) Full Rich Setting.
- b) Cruising mixture setting.
- c) Mixture ratio very close to idle cut-out.
- d) Mass ratio of 1/15.



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**40. 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

**41. Which of the following physical stimuli may cause stress reactions?**  
-1: noise.-2: conflict.-3: temperature.-4: an administrative problem.-5: hunger. The combination of correct statements is:

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

**42. In straight and level flight, as speed is reduced:**

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- a) Both elevator and trim tab are deflected further upwards.
- b) The elevator is deflected further upwards and the trim tab further downwards.
- c) The elevator is deflected further downwards and the trim tab further upwards.
- d) The elevator and trim tab do not move.

**43. At maximum certificated take-off mass an aeroplane departs from an airfield which is not limiting for either take-off or landing masses. During initial climb the number one engine suffers a contained disintegration. An emergency is declared and the aeroplane returns to departure airfield for an immediate landing. The most likely result of this action will be**

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- a) A landing further along the runway than normal.
- b) A high threshold speed and a shorter stop distance.
- c) A landing short resultant from the increased angle of approach due to the very high aeroplane mass.
- d) A high threshold speed and possible undercarriage or other structural failure.

**44. Given: GS = 236 kt. Distance from A to B = 354 NM What is the time from A to B?**

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- a) 1 HR 30 MIN
- b) 1 HR 40 MIN
- c) 1 HR 10 MIN
- d) 1 HR 09 MIN

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## 45. Which statement concerning the inclusion of a clearway in take-off calculation is correct?

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- a) The field length limited take-off mass will increase
- b) V1 remains constant
- c) V1 is increased
- d) The usable length of the clearway is not limited

## 46. In case the transponder fails before the departure for an IFR flight, the pilot shall:

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- a) Obtain prior permission by ATC to conduct the flight
- b) Inform ATC after departure
- c) Insert under item 18 of the flight plan 'transponder unserviceable'
- d) Inform FIS for relay to AIS

## 47. The upper antenna of the TCAS II is:

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- a) Omni-directional because it is merged with the transponder antenna.
- b) Directional because it is merged with the transponder antenna.
- c) Directional to improve the surveillance of intruders.
- d) Omni-directional to improve the surveillance of intruders.

## 48. During deceleration following a landing in a southerly direction, a magnetic compass made for the northern hemisphere indicates:

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- a) An apparent turn to the east.
- b) An apparent turn to the west.
- c) No apparent turn.
- d) No apparent turn only on northern latitudes.

## 49. Which of the following gases is fundamentally responsible for decompression sickness?

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- a) Carbon dioxide.
- b) Oxygen.
- c) Sodium.
- d) Nitrogen.

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**50. If smoke appears in the air conditioning, the first action to take is to:**

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- a) Put on the mask and goggles.
- b) Cut off all air conditioning units.
- c) Determine which system is causing the smoke.
- d) Begin an emergency descent.

**51. Separation methods and minima - vertical separation (non-RVSM) Above flight level FL 290 the Vertical Separation Minimum (VSM) between aircraft flying in the same direction is:**

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- a) 3000'
- b) 2000'
- c) 1500'
- d) 4000'

**52. A ground proximity warning system (GPWS), when mandatory installed on board an aircraft, must in all cases generate:**

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- a) At least one sound alarm to which a visual alarm can be added
- b) A visual alarm to which a sound alarm can be added
- c) A sound and visual alarm
- d) A sound alarm or a visual alarm

**53. What is the equation for the climb gradient expressed in percentage during unaccelerated flight (applicable to small angles only)?**

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- a)  $\text{Climb Gradient} = ((\text{Thrust} - \text{Drag}) / \text{Weight}) \times 100$
- b)  $\text{Climb Gradient} = (\text{Lift} / \text{Weight}) \times 100$
- c)  $\text{Climb Gradient} = ((\text{Thrust} - \text{Mass}) / \text{Lift}) \times 100$
- d)  $\text{Climb Gradient} = ((\text{Thrust} + \text{Drag}) / \text{Lift}) \times 100$

**54. An aeroplane is operated at FL 330. 22 passenger are on board. The first aid oxygen to be on board at departure shall provide breathing supply for at least:**

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- a) 1 passenger for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 14000 ft.
- b) No first aid required.
- c) 2 passengers for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 10000 ft.
- d) 1 passenger for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 8000 ft.

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**55. Which is the correct sequence of speeds during take-off?**

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

**56. In order to maintain an accurate vertical using a pendulous system, an aircraft inertial platform incorporates a device:**

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- a) 2
- b) 4
- c) 6
- d) 5

**57. An aircraft whose maximum approved configuration for passenger seats is 200 seats must be equipped with:**

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- a) 3 hand fire extinguishers in the compartment.
- b) 5 hand fire extinguishers in the passenger compartment.
- c) 4 hand fire extinguishers in the passenger compartment.
- d) 7 Hand Fire Extinguishers In The Passenger Compartment.

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

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

**59. The Maximum Taxi (Ramp) Mass is governed by:**

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- a) Tyre speed and temperature limitations.
- b) Structural considerations.
- c) Taxi distance to take-off point.
- d) Bearing strength of the taxiway pavement.

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**60. Fastair 345 has been instructed 'Standby 118.9 for TOWER'. What does this instruction mean?**

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- a) Fastair 345 shall establish radio contact with TOWER on frequency 118.9
- b) Fastair 345 shall change to frequency 118.9 on which information is being broadcast
- c) Fastair 345 shall squawk standby and then establish radio contact with TOWER on frequency 118.9
- d) Fastair shall change to frequency 118.9 and listen out, but the TOWER will initiate further communications

**61. During certification flight testing on a four engine turbojet aeroplane the actual take-off distances measured are:3050 m with failure of the critical engine recognised at V12555 m with all engines operating and all other things being equal The take-off distance adopted for the certification file is:**

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- a) 3513 m
- b) 3050 m
- c) 2938 m
- d) 2555 m

**62. 'Vapour lock' is the phenomenon by which:**

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- a) Heat produces vapour plugs in the fuel line.
- b) Burnt gas plugs forming and remaining in the exhaust manifold following an overheat and thereby disturbing the exhaust.
- c) Abrupt and abnormal enrichment of the fuel/air mixture following an inappropriate use of carburettor heat.
- d) Water Vapour Plugs Are Formed In The Intake Fuel Line Following The Condensation Of Water In Fuel Tanks Which Have Not Been Drained For Sometime.

**63. Which of these statements about a gust lock system are correct or incorrect? 1) A gust lock can be used in flight to reduce the effects of turbulence. 2) There is no need for a gust lock on reversible flight controls.**

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- a) 1) is incorrect, 2) is incorrect.
- b) 1) Is Correct, 2) Is Correct.
- c) 1) Is Incorrect, 2) Is Correct.
- d) 1) Is Correct, 2) Is Incorrect.

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## 64. When flying in accordance with IFR, which of the following best describes the term 'Visual approach' ?

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- a) A visual manoeuvre executed by an IFR flight when the weather conditions at the aerodrome of destination are equal to or better than required VMC minima
- b) An approach executed by an IFR flight unable to maintain VMC
- c) An extension of an instrument approach procedure to bring an aircraft into position for landing on a runway which is not suitably located for straight-in-approach
- d) An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain

## 65. From the following list:1. Fuel jettisoning system and its operation are free from fire hazard2. The fuel discharges clear of any part of the aeroplane3. Fuel fumes do not enter any part of the aeroplane4. The jettisoning operation does not adversely affect the controllability of the aeroplane.Which of the above are requirements that must be shown to exist during fuel jettisoning tests:

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

## 66. The take-off mass of an aeroplane is restricted by the climb limit. What would be the effect on this limit of an increase in the headwind component?

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- a) The climb limited take-off mass would increase
- b) The effect would vary depending upon the height of any obstacle within the net take-off flight path
- c) The climb limited take-off mass would decrease
- d) None

## 67. What feature is normally associated with the initial stage of a thunderstorm?

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- a) Roll cloud
- b) Frequent lightning
- c) Continuous updraft
- d) Rain or hail at the surface

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**68. Complete line 2 of the 'FLIGHT NAVIGATION LOG', positions 'C' to 'D'. What is the HDG°(M) and ETA?**

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- a) HDG 193° - ETA 1249 UTC
- b) HDG 188° - ETA 1229 UTC
- c) HDG 183° - ETA 1159 UTC
- d) HDG 193° - ETA 1239 UTC

**69. The most effective way to dissipate cloud is by**

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- a) Convection
- b) Subsidence
- c) A decrease in pressure
- d) A decrease in temperature

**70. When on a RNP 1 route is indicated A342 Z, means that all turns shall be made within the allowable RNP tolerance of a tangential arc between the straight leg segments with a radius of**

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- a) 15 NM on the route between 30° and 90° at and below FL 190
- b) 25 NM on the route between 30° and 90° at and below FL190
- c) 22.5 NM on the route between 30° and 90° at and above FL 250
- d) 15 NM on the route between 30° and 90° at and above FL 200

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## Schema Risposte

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

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