

Exam simulation

ATPL - Airline Transport Pilot license - Performance



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STUDENT NAME:

DATE AND TIME:

01. What does the abbreviation 'INS' mean?

- a) Instrument navigation system
- b) International NOTAM system
- c) Inertial navigation system
- d) International navigation service

02. QNH is the Q-code to indicate:

- a) The atmospheric pressure at aerodrome elevation (or at runway threshold)
- b) The atmospheric pressure measured at the aerodrome reference point (ARP)
- c) The altimeter sub-scale setting to obtain elevation when on the ground
- d) The atmospheric pressure referred to the highest obstacle located on the surface of an aerodrome

03. 265 US-GAL equals? (Specific gravity 0.80)

- a) 862 kg
- b) 895 kg
- c) 803 kg
- d) 940 kg

04. A relay is:

- a) A unit which is used to convert electrical energy into heat energy.
- b) A device which is used to increase electrical power.
- c) A magnetically operated switch.
- d) Another name for a solenoid valve.

05. For the same TAS, when pressure altitude increases below the tropopause:

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

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06. An aircraft is approaching under visual flight rules an airfield whose runway is parallel to the coast. When downwind over the sea, the airfield is on the right. What wind effect should be anticipated on final approach and landing during a sunny afternoon?

- a) Crosswind from the left
- b) Crosswind from the right
- c) Headwind
- d) Tailwind

07. The system notifying in advance the circumstances requiring important changes in the methods of operation, based on common effective dates, is identified by the acronym:

- a) NOTAM
- b) PANS
- c) AIRAC
- d) IFPS

08. Minimum planned take-off fuel is 160 kg (30% total reserve fuel is included). Assume the groundspeed on this trip is constant. When the aircraft has done half the distance the remaining fuel is 70 kg. Is diversion to a nearby alternate necessary?

- a) Diversion to a nearby alternate is not necessary, because it is allowed to calculate without reserve fuel.
- b) Diversion to a nearby alternate is not necessary, because the reserve fuel has not been used completely.
- c) Diversion to a nearby alternate is necessary, unless the captain decides to continue on his own responsibility.
- d) Diversion to a nearby alternate is necessary, because the remaining fuel is not sufficient.

09. During flight in IMC, the most reliable sense which should be used to overcome illusions is the:

- a) Vestibular sense
- b) 'Seat-of-the-pants-Sense'
- c) Visual sense by looking outside
- d) Visual sense, interpreting the attitude indicator

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10. The purpose of the blow-in-doors at the air inlets is to:

- a) Provide the engine with additional air at high power settings at cruising speed.
- b) Feed cooling air to the engine cowling.
- c) Provide the engine with additional air at high power settings and low air speeds.
- d) Serve to increase the relative velocity at the first compressor stage.

11. Given: X = Distance A to point of equal time (PET) between A and B E = Endurance D = Distance A to B O = Groundspeed 'on' H = Groundspeed 'back'. The formula for calculating the distance X to point of equal time (PET) is:

- a) $X = D \times H / (O + H)$
- b) $X = D \times O \times H / (O + H)$
- c) $X = E \times H / (O + H)$
- d) $X = D \times O / (O + H)$

12. A piece of equipment on your commercial air transport aircraft fails while taxiing to the holding point. The reference document you use in the first place to decide on the procedure to follow is:

- a) The minimum equipment list.
- b) The OPS.
- c) The operations manual's chapter 'Abnormal and Emergency Procedures'.
- d) The flight record.

13. Isotachs are lines joining equal

- a) Sea-level pressures
- b) Horizontal wind speed gradients
- c) Wind speeds
- d) Wind speed lapse rates

14. Below the tropopause, when descending at constant CAS:

- a) Mach number decreases and the velocity of sound increases.
- b) Mach number and the velocity of sound decrease.
- c) Mach number and the velocity of sound increase.
- d) Mach number increases and the velocity of sound decreases.

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15. During the flight of two aircraft in NAT HLA (North Atlantic High Level Airspace) with a leading aircraft flying at higher speed, the longitudinal separation must not be below:

- a) 5 minutes
- b) 20 minutes
- c) 15 minutes
- d) 10 minutes

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

- a) Altitude based on regional QNH
- b) Aircraft height based on sub-scale setting
- c) Flight level based on 1013.25 hPa
- d) Height based on QFE

17. By what percentage does the lift increase in a level turn at 45° angle of bank, compared to straight and level flight?

- a) 31%
- b) 19%
- c) 52%
- d) 41%

18. What is the radiotelephony call sign for the aeronautical station providing approach control (no radar service)?

- a) ARRIVAL
- b) RADAR
- c) APPROACH
- d) CONTROL

19. An aeroplane has a stall speed of 100 kt at a mass of 1000 kg. If the mass is increased to 2000 kg, the new value of the stall speed will be:

- a) 141 KT
- b) 123 KT
- c) 150 KT
- d) 200 KT

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20. 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) $V_A \geq V_S \text{ SQRT}(2.5)$

21. On board a non-pressurized aircraft, the crew and all the passengers must be fed with oxygen throughout the flight period during which the pressure altitude is greater than:

- a) 13 000 ft
- b) 10 000 ft
- c) 11 000 ft
- d) 12 000 ft

22. 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.

23. Regarding take-off performance limitations, which of the following statements is correct?

- a) The performance limited take-off mass is independent of the wind component
- b) The accelerate-stop distance required is independent of the runway condition
- c) The climb limited take-off mass is independent of the wind component
- d) The take-off distance with one engine out is independent of the wind component

24. Find the time to the Point of Safe Return (PSR). Given: Maximum useable fuel 15000 kg, Minimum reserve fuel 3500 kg, TAS out 425 kt, Head wind component out 30 kt, TAS return 430 kt, Tailwind component return 20 kt, Average fuel flow 2150 kg/h

- a) 2 h 59 min
- b) 3 h 43 min
- c) 2 h 43 min
- d) 2 h 51 min

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25. A VOR and DME are co-located. You want to identify the DME by listening to the callsign. Having heard the same callsign 4 times in 30 seconds the:

- a) DME callsign is the one with the higher pitch that was broadcast only once
- b) VOR and DME callsigns were the same and broadcast with the same pitch
- c) DME callsign is the one with the lower pitch that was broadcast several times
- d) DME callsign was not transmitted, the distance information is sufficient proof of correct operation

26. What is the most important aspect of the 'backside of the power curve'?

- a) The altitude cannot be maintained.
- b) The aeroplane will not stall.
- c) The elevator must be pulled to lower the nose.
- d) The speed is unstable.

27. A synchroscope is used on aircraft to:

- a) Reduce the vibration of each engine.
- b) Set several engines to the same speed.
- c) Achieve optimum control of on-board voltages.
- d) Reduce the RPM of each engine.

28. At latitude 60°N the scale of a Mercator projection is 1: 5 000 000. The length on the chart between 'C' N60° E008° and 'D' N60° W008° is:

- a) 17.8 cm
- b) 19.2 cm
- c) 35.6 cm
- d) 16.2 cm

29. The Zero Fuel Mass and the Dry Operating Mass

- a) Differ by the sum of the mass of usable fuel plus traffic load mass.
- b) Are the same value.
- c) Differ by the mass of usable fuel.
- d) Differ by the value of the traffic load mass.

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30. What shall the pilot's read back be for 'Climb to FL 280':

- a) Climbing to flight level two eighty
- b) Climbing to flight level two eight zero
- c) Climbing to two eighty
- d) Climbing two eight zero

31. About ten identical clouds are in the sky, well isolated from one another, dense, with well defined contours, developing vertically in a cauliflower shape. The side of these clouds lit by the sun is bright white. Their base, relatively dark, is essentially horizontal and at FL 30, and their tops at FL 150. These clouds are

- a) Broken Cumulus humilis
- b) Towering Cumulus
- c) Stratocumulus
- d) Altocumulus castellanus

32. You plan to fly from point A (60N 010E) to point B (60N 020E). The gyro North of the gyro compass, assumed to be operating perfectly, with no rate correction device, is aligned with the true North of point A. The constant gyro heading to be followed when starting from A given that the flight time scheduled is 1 h 30 min with a zero wind, is equal to:

- a) 080
- b) 066
- c) 076
- d) 085

33. An aircraft is situated at 30°N - 005°E with a magnetic variation of 10°W. A VOR is located at 30°N - 013°E with a magnetic variation of 15°W. The aircraft is situated on the VOR radial:

- a) 101°
- b) 281°
- c) 256°
- d) 285°

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34. Which of the following statements about stall speed is correct?

- a) Use of a T-tail will decrease the stall speed
- b) Increasing the angle of sweep of the wing will decrease the stall speed
- c) Increasing the anhedral of the wing will decrease the stall speed
- d) Decreasing the angle of sweep of the wing will decrease the stall speed

35. Maximum Tyre Speed can limit the Lift-off Speed. Which kind of speed can be directly used to determine this limitation?

- a) Groundspeed
- b) EAS
- c) TAS
- d) IAS

36. If you are requested to 'Report flight conditions', what does that mean?

- a) Indicate whether you are flying in IMC or in VMC
- b) Indicate whether you are flying IFR or VFR
- c) Indicate if visibility is sufficient for landing
- d) Indicate weather conditions as wind, visibility, temperature

37. Which of the following combinations basically has an effect on the angle of descent in a glide? (Ignore compressibility effects.)

- a) Configuration and angle of attack
- b) Configuration and mass
- c) Altitude and configuration
- d) Mass and altitude

38. How is stall warning presented to the pilots of a large transport aeroplane?

- a) Stick shaker and / or aerodynamic buffet
- b) Aural warning only
- c) Stall warning light only
- d) Stick pusher

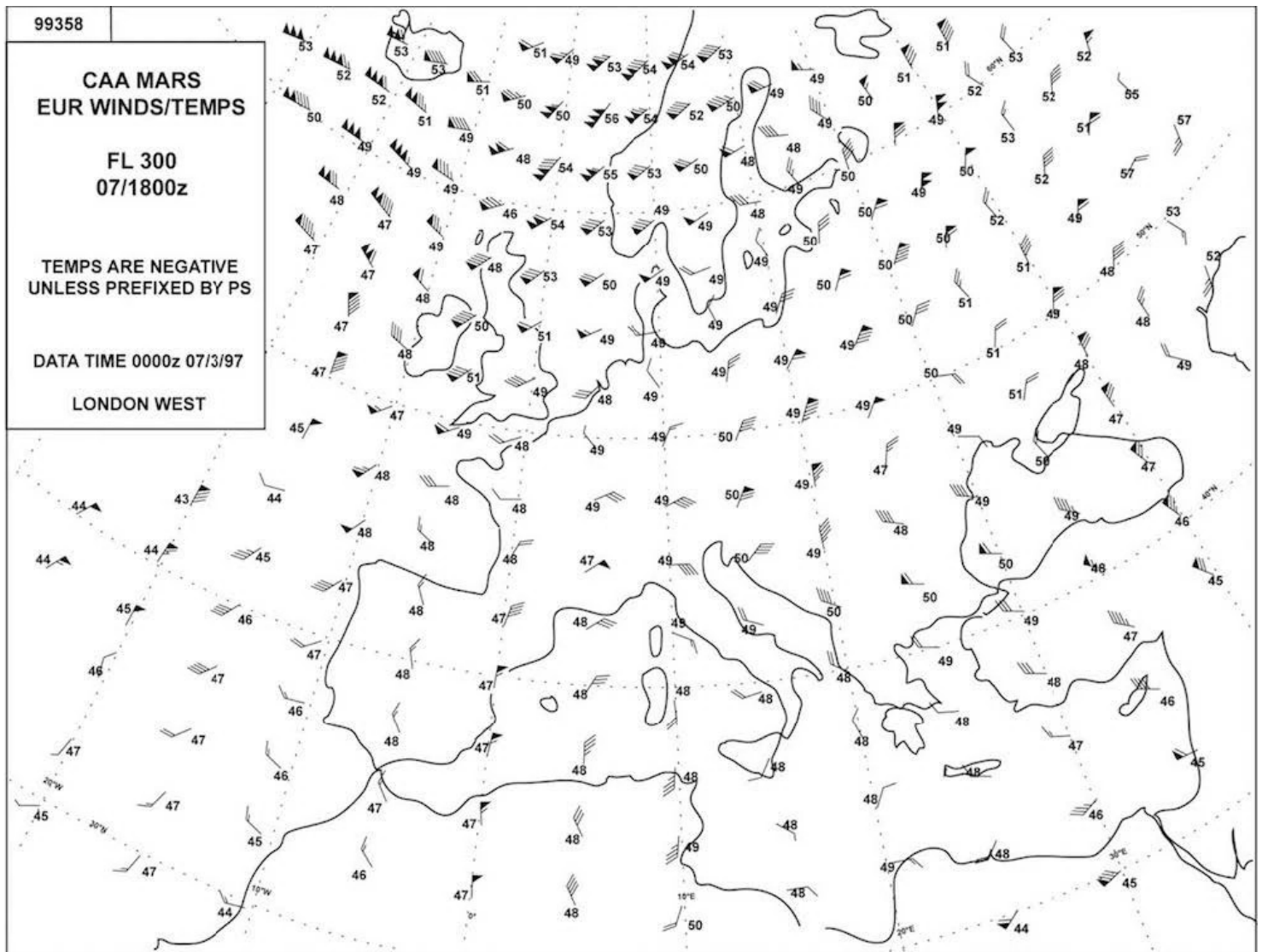
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39. What mean temperature (°C) is likely on a course of 360° (T) from 40°N to 50°N at 040°E?



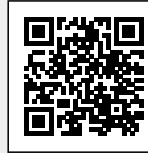
- a) -46
- b) -47
- c) -50
- d) -49

40. An aeroplane equipped with fully powered flight controls (irreversible type):

- a) Remains normally controllable in case of total loss of power to the flight control system.
- b) Requires the use of an artificial feel system.
- c) Must be equipped with control locks.
- d) Does not require the use of an artificial feel system.

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41. Which of the following requirements should be met when planning a flight with icing conditions:

- a) The flight should be planned so that a change of cruising level can be initiated rapidly
- b) The aircraft shall be equipped with approved ice-protection systems
- c) A meteorologist shall decide whether the flight may be performed without ice-protection systems
- d) The aircraft shall before flight be sprayed with anti-icing fluid

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

- 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

43. Which flight-manoeuve will most likely induce vertigo? Turning the head while

- a) Banking
- b) Flying straight and level
- c) Descending
- d) Climbing

44. An aneroid capsule: 1 - measures differential pressure 2 - measures absolute pressure 3 - is used for low pressure measurement 4 - is used for very high pressure measurement. The combination regrouping all the correct statements is:

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

45. The proprioceptive senses ('Seat of-the-Pants-Sense')

- a) Is a natural human instinct, always indicating the correct attitude
- b) May give incorrect information, when outside visual reference is lost
- c) Can neither be used for motor coordination in IMC and VMC
- d) Can be used, if trained, to avoid spatial disorientation in IMC

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46. When, in flight, the needle and ball of a needle-and-ball indicator are on the right, the aircraft is:

- a) Turning right with not enough bank
- b) Turning right with too much bank
- c) Turning left with not enough bank
- d) Turning left with too much bank

47. For 1st February the Air Almanac lists the following data: Latitude: 66°00'N. Morning civil twilight: 07:56 Sunrise: 09:00 Sunset: 15:28 Evening civil twilight: 16:32. The duration of morning twilight at 66°00'N is:

- a) 7 hours 56 minutes and starts at 09:00 UTC.
- b) 1 hour 4 minutes and starts at 07:56 LMT.
- c) 1 hour 4 minutes and starts at 09:00 UTC.
- d) 8 hours 36 minutes and starts at 07:56 UTC.

48. During an erect spin recovery:

- a) The control stick is moved side ways, against the angle of bank
- b) The ailerons are held in the neutral position
- c) The control stick is pulled to the most aft position
- d) The control stick is moved side ways, in the direction of the angle of bank

49. The operating frequency range of a low altitude radio altimeter is:

- a) 5400 MHz or 9400 MHz.
- b) 2700 MHz to 2900 MHz.
- c) 4200 MHz to 4400 MHz.
- d) 5 GHz.

50. For a planned flight the calculated fuel is as follows: Flight time: 2h42min The reserve fuel, at any time, should not be less than 30% of the remaining trip fuel. Taxi fuel: 9 kg Block fuel: 136 kg How 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.

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51. An aeroplane carries out a descent from FL 410 to FL 270 at cruise Mach number, and from FL 270 to FL 100 at the IAS reached at FL 270. How does the angle of descent change in the first and in the second part of the descent? Assume idle thrust and clean configuration and ignore compressibility effects.

- a) Increases in the first part; is constant in the second.
- b) Is constant in the first part; decreases in the second.
- c) Increases in the first part; decreases in the second.
- d) Decreases in the first part; increases in the second.

52. 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.

53. During a night flight, an observer located in the cockpit, seeing an aircraft coming from front right on approximate opposite parallel track, will first see the:

- a) Red light
- b) White light
- c) Green light
- d) Red and white flashing light

54. What does the word 'contact' mean?

- a) Radar contact established
- b) Listen out on (frequency)
- c) Establish radio contact with...
- d) That is correct

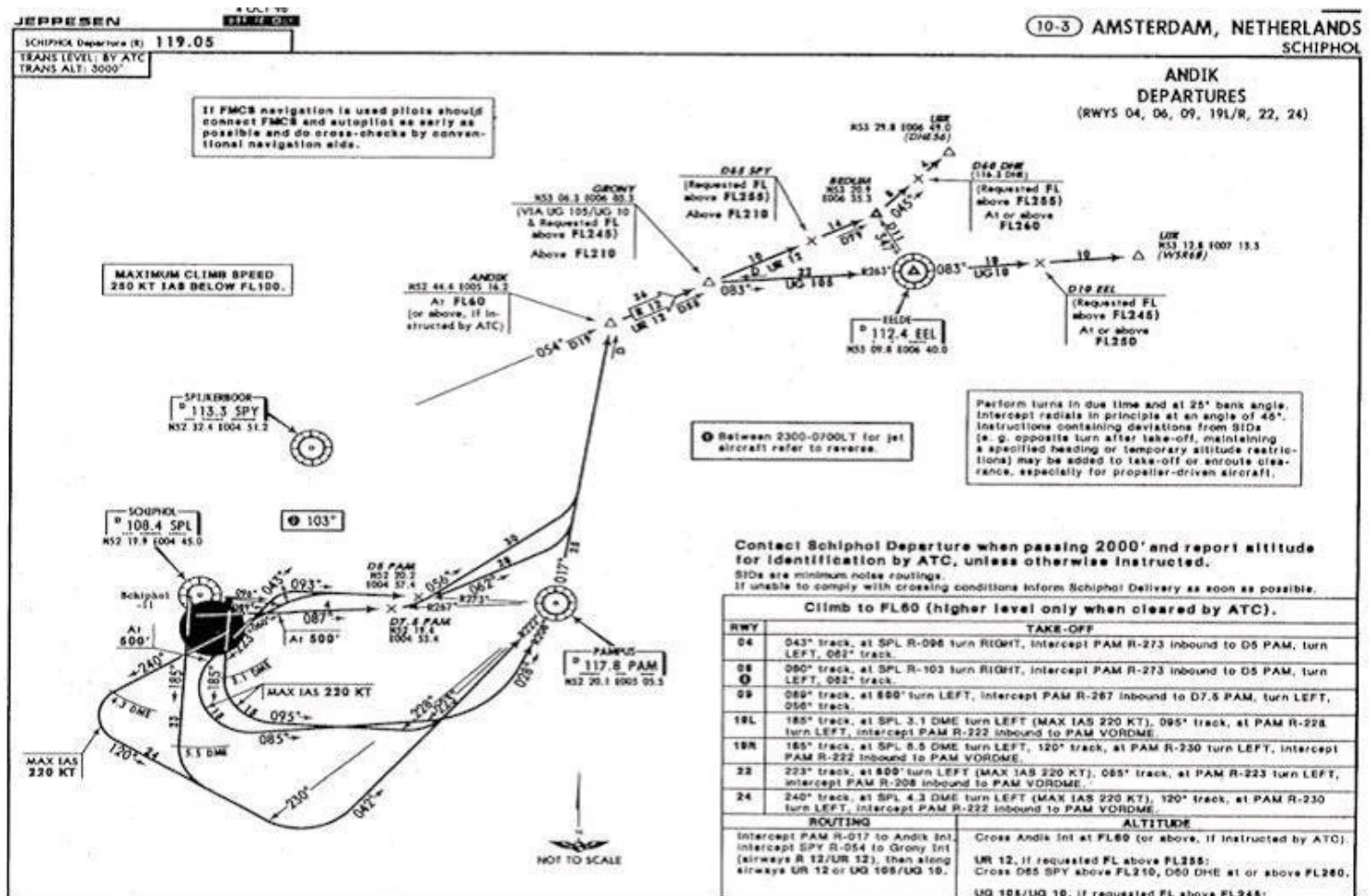
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55. Refer to Student Pilot Route Manual Amsterdam, Schiphol (Plate 10- 3): Which of the following statements is correct for ANDIK departures from runway 19L?



- a) Contact SCHIPHOL DEPARTURE 119.05 passing 2000 ft and report altitude
- b) Maximum IAS 250 kt turning left at SPL 3.1 DME
- c) The distance to ANDIK is 25 NM
- d) Cross ANDIK below FL60

56. 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.

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57. When turning in IMC, head movements should be avoided as much as possible. This is a prevention against:

- a) Coriolis illusion
- b) Pressure vertigo
- c) Oculogyral illusion
- d) Autokinesis

58. A servo tab moves:

- a) According to the airflow that surrounds it.
- b) In the same direction of the control surface to which it's hinged.
- c) Parallel to the control surface to which it is hinged.
- d) Opposite of the control surface to which it is hinged.

59. What is the correct way of expressing visibility?

- a) Visibility 1200 feet
- b) Visibility 1.2 nautical miles
- c) Visibility 1200 metres
- d) Visibility 1.2 kilometres

60. During a night flight, an observer located in the cockpit, seeing an aircraft coming from front left on approximate opposite parallel track, will first see the:

- a) White steady light
- b) Green steady light
- c) Green and white flashing light
- d) Red steady light

61. Considering an airspeed indicator, a second striped needle, if installed, indicates:

- a) Never-exceed speed (VNE)
- b) Maximum operating speed (VMO)
- c) Never-exceed speed (VNE) or maximum operating speed (VMO), depending on which is the higher
- d) Never-exceed speed (VNE) or maximum operating speed (VMO), depending on which is the lowest

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62. At which levels may Reduced Vertical Separation Minimum (RVSM) be used within the NAT region?

- a) Between FL275 and FL400 inclusive.
- b) Between FL245 and FL410 inclusive.
- c) Between FL290 and FL410 inclusive.
- d) Below FL290.

63. The time is 9:20 AM What is the correct way of transmitting this time if there is no possibility of confusion about the hour?

- a) Twenty
- b) Two zero this hour.
- c) Two zero.
- d) Nine twenty AM

64. For a non pressurised aircraft, all required cabin crew members shall be supplied with supplemental oxygen during:

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

65. Given: Compass Heading 090 Deviation 2W Variation 12E, TAS 160 KT Whilst maintaining a radial 070 from a VOR station, the aircraft flies a ground distance of 14 NM in 6 MIN. What is the W/V (T)?

- a) 160° / 50 KT
- b) 155° / 25 KT
- c) 340° / 98 KT
- d) 340° / 25 KT

66. Just prior to departure, you accept 10 passengers additional on board who will be seated in 'compartment OC' and you have 750 kg unloaded from cargo compartment 5. The take-off centre of gravity in MAC % (Mean Aerodynamic Chord) will be located at:

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LOAD and TRIM SHEET

DRY OPERATING WEIGHT CONDITIONS WEIGHT (1000 kg) 110 CG (% MAC) 30,5%		AIRCRAFT REGISTER: DATE: _____ PREPARED BY: _____ FLT Nbr: _____ FROM: _____ TO: _____		DRY OPERATING WEIGHT = 110.000 WEIGHT DEVIATION (PANTRY) = 100 CORRECTED DRY OPER WEIGHT = 110.100 CARGO = 11.500 PASSENGERS 2'40 x 7'5 = 18.000 ZERO FUEL WEIGHT = 139.600 TOTAL FUEL = 72.000 TOTAL WEIGHT = 211.600	
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ZONES	E	F	G
WEIGHT (kg) DEVIATION		+100	

BASIC INDEX CORRECTION			
DRY OPER. WEIGHT DEVIATION	ZONES		
	E	F	G
	+ 100 kg		
- 100 kg			
INDEX CORRECTION		-0,51	

CORRECTED INDEX

→

118,6

ZONES	Nbr	WEIGHT (kg)	INDEX
CARGO 1		2.500	500 kg
CARGO 2		3.000	500 kg
CARGO 3		3.000	500 kg
CARGO 4		2.000	500 kg
CARGO 5		1.000	250 kg
CABIN OA	20		5 PAX
CABIN OB	120		20 PAX
CABIN OC	100		10 PAX

FUEL INDEX	+8
SEE TABLE OVERLEAF	

NOTA

TAKE OFF	
CG % MAC	29,9

FUEL INDEX	
WEIGHT tons	139,6
CG % MAC	30,5

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- a) 29.5 %
- b) 27.8 %
- c) 27.2 %
- d) 30.5 %

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67. At what approximate height above the WGS-84 ellipsoid are NAVSTAR/GPS satellites circling the earth?

- a) 10900 km
- b) 20200 km
- c) 19500 km
- d) 36000 km

68. The richness of a fuel/air mixture ratio is the:

- a) Volume of fuel relative to the volume of air.
- b) Mass of fuel relative to the volume of air.
- c) Volume of fuel relative to the mass of the volume of air.
- d) Real mixture ratio relative to the theoretical ratio.

69. Below its design speed an axial compressor:

- a) Has a tendency to surge in the center stages.
- b) Has no tendency to surge.
- c) Has a tendency to surge in the rear stages.
- d) Has a tendency to surge in the front stages.

70. Considering VR, which statement is correct?

- a) VR is the lowest climb speed after engine failure
- b) In case of engine failure below VR the take-off should be aborted
- c) VR is the speed at which rotation should be initiated
- d) VR is the lowest speed for directional control in case of engine failure

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Response Scheme

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

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

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Response form

Use this form to mark your answers

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