Exam simulation

ATPL - Airline Transport Pilot Licence, 120 questions on 120 minutes!

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STUDENT NAME:	DATE AND TIME:

01. For approved operations on the Shanwick Tango routes T9 and T290, with the required RNP 2 Continental capability and ADS-B equipment, what is the minimum number of long-range navigation systems (LRNS)?

a) Two Inertial Navigation Systems (INS)
b) Three Inertial Navigation System (INS)
c) Two independent Long Range Navigation Systems (LRNS)
d) One Long Range Navigation System (LRNS)

02. In the simplified anti-skid-inoperative take-off calculation for the training aircraft MRJT1, which of the following calls for a reduction of V1?

a) Increased take-off mass
b) Inoperative anti-skid
c) Increased outside air temperature
d) Inoperative flight management system

03. Indication of Mach number is obtained from:

a) An ordinary airspeed indicator scaled for Mach numbers instead of knots
b) A kind of echo sound comparing velocity of sound with indicated speed
c) Indicated speed and altitude using a speed indicator equipped with an altimeter type aneroid
d) Indicated speed (IAS) compared with true air speed (TAS) from the air data computer

04. The lift- and drag forces, acting on a wing cross section:

a) Are normal to each other at just one angle of attack
b) Depend on the pressure distribution about the wing cross section
c) Vary linearly with the angle of attack
d) Are proportional to each other, independent of angle of attack

05. Let Ts be static temperature and Tt the true ideal stagnation temperature, both in kelvin. For calorically perfect air with a ratio of specific heats of 1.4, which formula gives Tt? Kr = 0.9 is the recovery coefficient of a separate real temperature probe and does not define the ideal stagnation temperature.

a) $Tt = Ts \times (1 - 0.2\ M^2)$

b) $Tt = Ts \times (1 + 0.2\ M^2)$

c) $Tt = Ts / (1 + 0.2\ Kr\ M^2)$

d) $Tt = Ts \times (1 + 0.2\ Kr\ M^2)$

06. Within communication, what element suggests that a message has been received and understood?

a) Coding.

b) Synchronization.

c) Feedback.

d) Encoding.

07. 'Flutter' may be caused by:

a) Low airspeed aerodynamic wing stall.

b) Roll control reversal.

c) Distortion by bending and torsion of the structure causing increasing vibration in the resonance frequency.

d) High airspeed aerodynamic wing stall.

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

a) only gyro-stabilised systems

b) both gyro-stabilised platform and 'strapdown' systems

c) only to 'strapdown' laser gyro systems

d) both gyro-stabilised and laser gyro systems but only when operating in the non 'strapdown' mode

09. The maximum quantity of fuel that can be loaded into an aircraft's tanks is given as 3800 US Gallons. If the fuel density (specific gravity) is given as 0.79 the mass of fuel which may be loaded is:

a) 14383 kg

b) 11364 kg

c) 13647 kg

d) 18206 kg

10. An aircraft maintains FL 180 in the Northern Hemisphere, above the friction layer in approximately geostrophic flow, and experiences right drift relative to its intended track. How does its true altitude change as it continues along that track?

a) It increases.

b) It decreases

c) Without knowing the pressure change this question cannot be answered.

d) It remains constant.

11. Under ORO.FC.202, apart from the alternative instrument-approach check, which recent flight-experience option applies to single-pilot IFR aeroplane operations?

a) 5 IFR flights, including 3 take-off and 3 landings carried out during the preceding 90 days on the type or class of aeroplane in the single-pilot role.

b) 3 IFR flights, including 3 instrument approaches, carried out during the preceding 90 days on the type/class of aeroplane in the single-pilot role.

c) 5 IFR flights, including 3 take-off and 3 landings carried out during the preceding 30 days on the type or class of aeroplane in the single-pilot role.

d) 5 IFR flights, including 3 instrument approaches, carried out during the preceding 90 days on the type/class of aeroplane in the single-pilot role.

12. Which fuel-economy advantage helps explain the use of high-bypass turbofans, rather than comparable basic turbojets, for high-subsonic commercial transport?

a) Twin spool or triple spool jet engines require a high by pass ratio.

b) Their bypass airflow permits efficient production of thrust, reducing fuel consumption for a given useful thrust

c) They are lighter than straight jet engines.

d) They produce less noise.

13. Which aeroplane design has the highest probability of a super stall?

a) A canard wing

b) Swept wings

c) A T-tail

d) A low horizontal tail

14. Which statement about information held in short-term or working memory is correct?

a) It can be lost rapidly without active attention or rehearsal, and interruption or interference can disrupt retention.

b) It can be lost only through brain damage or disease.

c) Its contents automatically become permanent and cannot be affected by interference.

d) Every unrelated cockpit action inevitably erases all information held in it.

15. How many centimetres are equivalent to 36,25 inches?

a) 92,08 cm

b) 11,05 cm

c) 14,27 cm

d) 0,014 m

16. In ICAO’s definition, a Facility Performance Category III ILS, with ancillary equipment where necessary, provides guidance from its coverage limit down to and along:

a) A maximum height of 200 ft above the runway

b) The surface of the runway.

c) A maximum height of 50 ft above the runway

d) A maximum height of 100 ft above the runway

17. What does the abbreviation 'HX' mean?

a) Sunrise to sunset.

b) No specific working hours.

c) Continuous day and night service.

d) Sunset to sunrise.

18. The QFF at an airfield located 400 metres above sea level is 1016 hPa. The air temperature is 10°C lower than a standard atmosphere. What is the QNH?

a) More than 1016 hPa

b) 1016 hPa

c) Less than 1016 hPa

d) It is not possible to give a definitive answer

19. Given: FL 330 long range cruise OAT -63°C gross mass 50 500 kg. Find: true airspeed (TAS)

All Engines Maximum Cru

PRESSURE ALTITUDE 33,

GROSS WT. kg	TAS	0	100	200
		CRU		
35000	400	0	23	46
36000	405	230	252	275
37000	408	457	479	502
38000	412	681	703	725
39000	415	902	924	946
40000	419	1121	1143	1164
41000	421	1337	1358	1380
42000	424	1550	1571	1593
43000	426	1761	1782	1803
44000	428	1969	1990	2010

a) 433 kt
b) 420 kt
c) 418 kt
d) 431 kt

20. The pressure altitude is the altitude corresponding:

a) In ambient atmosphere, to the reference pressure Ps.
b) In standard atmosphere, to the reference pressure Ps.
c) In standard atmosphere, to the pressure Ps prevailing at this point.
d) In ambient atmosphere, to the pressure Ps prevailing at this point.

21. On a large pressurised transport aeroplane, the maximum cabin differential pressure is approximately:

a) 3 - 5 psi
b) 13 - 15 psi
c) 7 - 9 psi
d) 22 psi

22. What effect has a centre of gravity close to the most forward limit?

a) A better rate of climb capability.
b) A reduction in the specific fuel consumption.
c) A reduced rate of climb capability.
d) A decreased induced drag.

23. Under the traditional HEAVY/MEDIUM/LIGHT wake-turbulence categories, without a different approved wake scheme, a LIGHT aircraft takes off behind a MEDIUM aircraft from the same full-length starting point on the same runway. What minimum time separation applies?

a) 1 minute

b) 3 minutes

c) 5 minutes

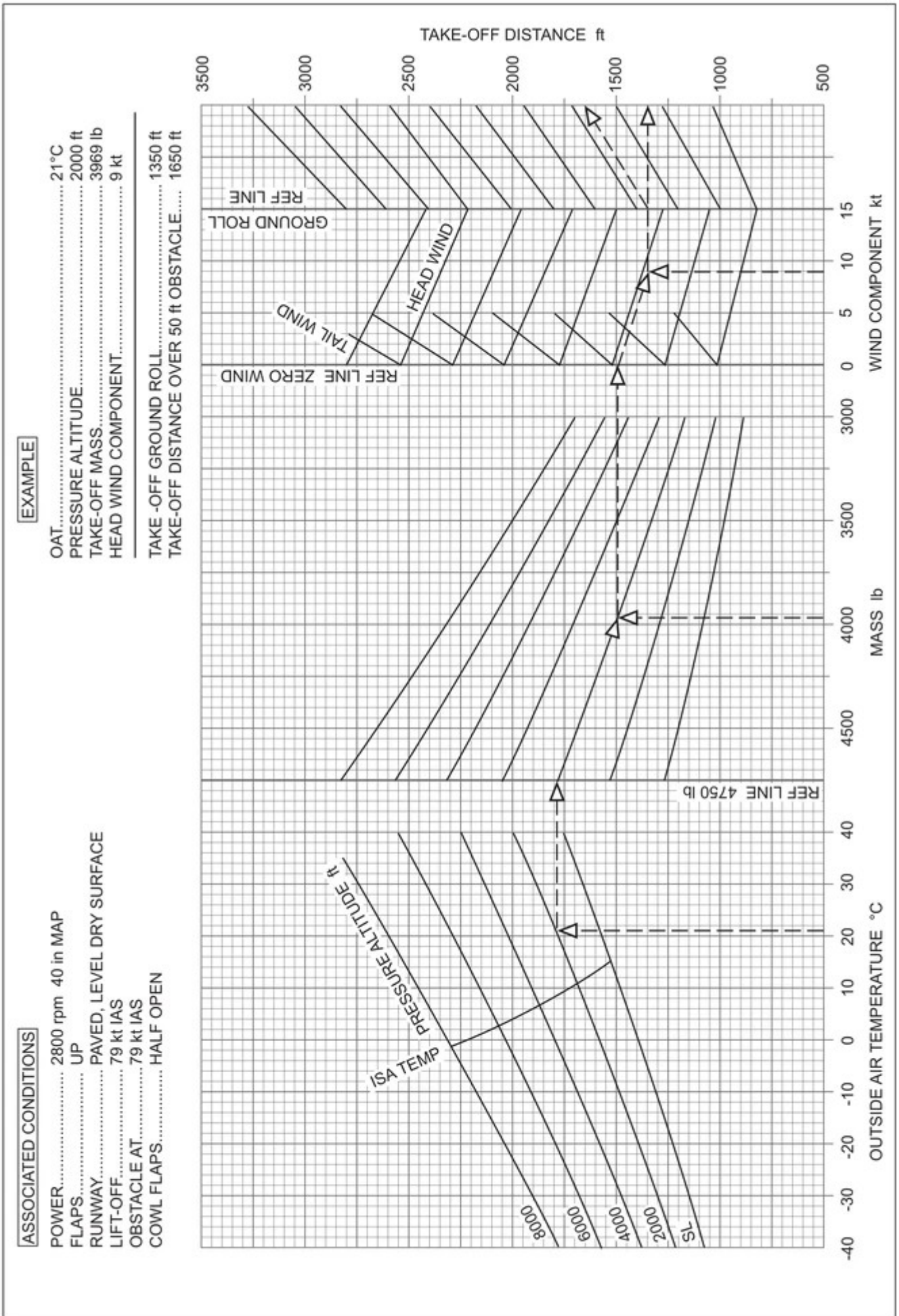
d) 2 minutes

24. Refer to Performance Manual MEP1 Figure 3.1 Normal Procedure Given: OAT -15 °C; Pressure Altitude: 4000'; RWY 12R Wind 080/12 KT; Take-off Mass: 4000 lbs; Runway Surface: tarred and dry. What is the minimum runway length? No stopway or clearway is available.

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TAKE-OFF DISTANCE ft
3500
3000
2500
2000
1500
1000
500
REF LINE
GROUND ROLL
HEAD WIND
TAIL WIND
REF LINE ZERO WIND
WIND COMPONENT kt
15
10
5
0
3000
3500
4000
4500
MASS lb
REF LINE 4750 lb
PRESSURE ALTITUDE ft
ISA TEMP
8000
6000
4000
2000
TS
40
30
20
10
0
-10
-20
-30
-40
OUTSIDE AIR TEMPERATURE °C
EXAMPLE
OAT..... 21°C
PRESSURE ALTITUDE..... 2000 ft
TAKE-OFF MASS..... 3969 lb
HEAD WIND COMPONENT..... 9 kt
TAKE -OFF GROUND ROLL..... 1350 ft
TAKE-OFF DISTANCE OVER 50 ft OBSTACLE..... 1650 ft
ASSOCIATED CONDITIONS
POWER..... 2800 rpm 40 in MAP
FLAPS..... UP
RUNWAY..... PAVED, LEVEL DRY SURFACE
LIFT-OFF..... 79 kt IAS
OBSTACLE AT..... 79 kt IAS
COWL FLAPS..... HALF OPEN

a) 1250 ft
b) 1750 ft
c) 1950 ft
d) 1550 ft

25. At what approximate date is the Earth furthest from the Sun (aphelion)?

a) Beginning of July
b) End of September
c) Beginning of January
d) End of December

26. An AIRAC is:

a) A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

b) An acronym for a system aimed at advance notification based on common effective dates, of circumstances necessitating significant changes in operating procedures.

c) A publication issued by or with the authority of a state containing aeronautical information of a lasting character essential to air navigation.

d) A package which consists of the following elements: AIP, supplements to the AIP, NOTAM, AIC, checklists and summaries.

27. According to FAA AC 43.13-1B, paragraph 12-37, a direct-reading compass should be swung when:

a) The aircraft is stored for a long period and is frequently moved
b) There is a large change in magnetic longitude
c) The aircraft has made more than a stated number of landings
d) Aircraft operation moves to a different geographical location with a major change in magnetic deviation.

28. On a transport type aircraft the fuel tank system is vented through:

a) A pressure regulator in the wing tip.
b) Bleed air from the engines.
c) Ram air scoops on the underside of the wing.
d) The return lines of the fuel pumps.

29. Relative humidity at a given temperature is the relation between

a) Water vapour weight and dry air weight
b) Water vapour weight and humid air volume
c) Actual water vapour content and saturated water vapour content
d) Dew point and air temperature

30. On an aeroplane without central fuel tank, the maximum Zero Fuel Mass is related to:

a) The bending moment at the wing root.
b) Variable equipment for the flight.
c) Wing loaded trip fuel.
d) Maximum Structural Take-Off Mass.

31. When flaps are deployed at constant angle of attack the lift coefficient will:

a) Increase
b) Vary as the square of IAS
c) Remain the same
d) Decrease

32. For a turbine engine, the self-sustaining speed relates to the minimum RPM at which the engine:

a) Is designed to idle after starting.

b) Will enable the generators to supply bus-bar voltage.

c) Operates most efficiently in the cruise.

d) Will continue to operate without any starter motor assistance.

33. The term 'Maximum Zero Fuel Mass' consist of:

a) The maximum permissible mass of an aeroplane with no usable fuel.

b) The maximum mass for some aeroplanes including the fuel load and the traffic load

c) The maximum mass authorized for a certain aeroplane not including the fuel load and operational items

d) The maximum mass authorized for a certain aeroplane not including traffic load and fuel load.

34. An aircraft is squawking 7600. This indicates:

a) It is diverting to the alternate aerodrome

b) It is requesting immediate level change

c) A radio-communication failure.

d) It is about to make a forced landing

35. When refuelling is being performed while passengers are boarding or disembarking the aircraft, one of the requirements is:

a) The aircraft's stairs be completely extended.

b) The ground area beneath the exits intended for emergency evacuation and slide deployment areas must be kept clear.

c) All flight crew shall remain at their station.

d) Refuelling is prohibited while passengers are boarding and/or disembarking.

36. Most transport aeroplanes are provided with protection against control jamming. This means that:

a) The flight control system has provisions to disconnect the part of the control system that becomes blocked.

b) In case of seizure, engine control is taken over automatically by an alternate electric circuit.

c) Seized brakes can be released from the cockpit.

d) The aeroplane is protected against the adverse effects of strong electromagnetic radiation.

37. For a conventional aeroplane, neutral longitudinal static stability corresponds to which centre-of-gravity condition?

a) Be caused by a centre of gravity which is towards the forward limit

b) Be totally unrelated to the position of the centre of gravity

c) The CG is at the whole-aircraft neutral point, so the longitudinal static stability margin is zero.

d) Cause the centre of gravity to move forwards

38. The indication of a fuel float gauge varies with: 1 - pitch attitude 2 - accelerations 3 - fuel temperature. The combination that regroups all of the correct statements is:

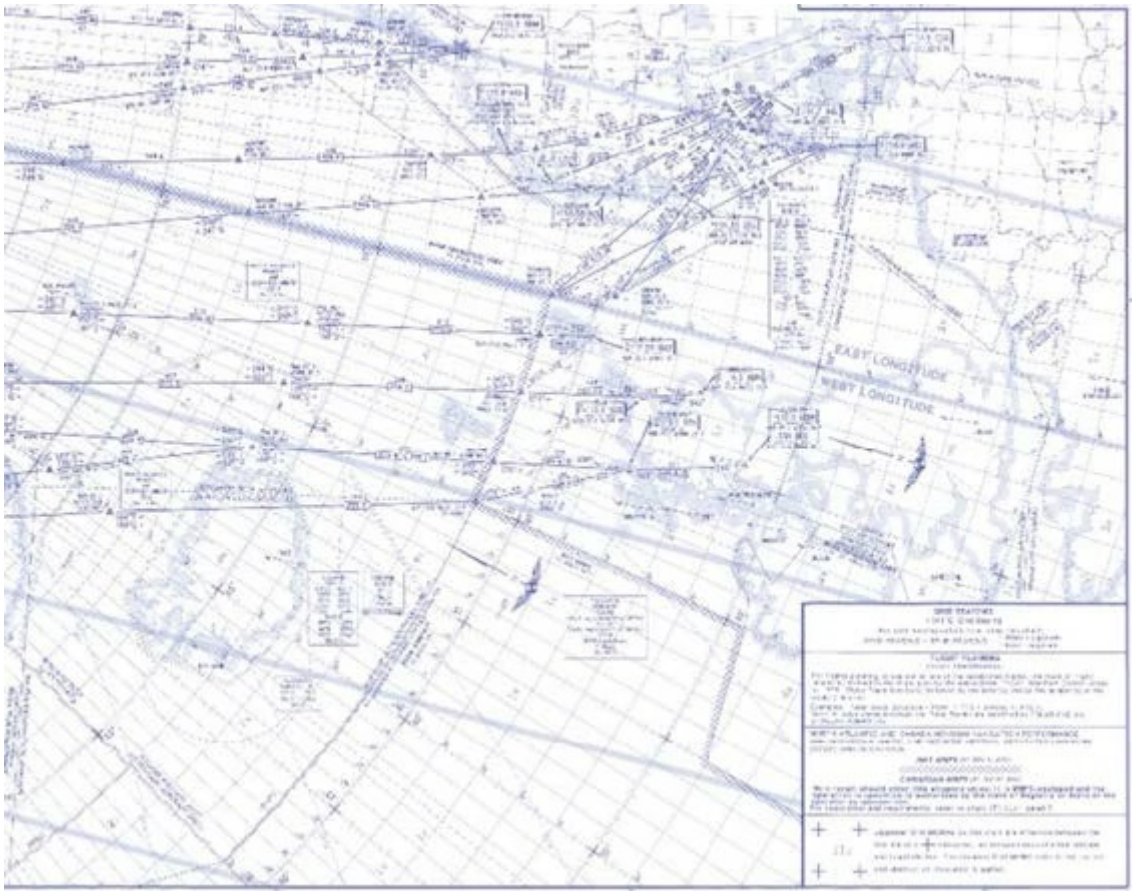
a) 1, 3.

b) 1, 2.

c) 1, 2, 3.

d) 2, 3.

39. At Keflavik (64°00'N 022°36'W), an aircraft's initial true course is 084°. Using a north-polar grid whose grid north is parallel to the Greenwich meridian, what is the initial grid course?



a) 080°
b) 096°
c) 106.6° (G), approximately 107° (G)
d) 066°

40. Which of the following circumstances most favour the development of radiation fog?

a) Warm moist air at the windward side of a mountain
b) Maritime tropical air flowing over cold sea
c) Moist air over land during clear night with little wind
d) Advection of very cold air over much warmer sea

41. On the readability scale what does 'readability 1' mean?

a) Readable
b) Perfectly readable
c) Unreadable
d) Readable but with difficulty

42. EUROCONTROL Network Manager has discontinued its repetitive flight plan (RPL) service. For regularly operated IFR flights handled by IFPS, what must an operator now do?

a) Submit an RPL covering at least ten consecutive days
b) File an individual flight plan for each flight
c) Submit an RPL only after twenty consecutive occurrences
d) Rely on the published commercial timetable instead of filing flight plans

43. How many NM would an aircraft travel in 1 MIN 45 SEC if GS is 135 kt?

a) 2.36
b) 3.25
c) 3.94
d) 39.0

44. On a long distance flight the gross mass decreases continuously as a consequence of the fuel consumption. The result is:

a) The specific range increases and the optimum altitude decreases.
b) The speed must be increased to compensate the lower mass.
c) The specific range and the optimum altitude increase.
d) The specific range decreases and the optimum altitude increases.

45. FAA civil fixed-wing bird-strike statistics show that most reported strikes occur close to the ground. Which of these height bands above ground includes that majority?

a) Under 500 m
b) Between 500 and 1 500 m
c) Between 500 and 1 000 m
d) Above 1 000 m

46. A laser gyro can measure:

a) A rotation motion.
b) An acceleration and a rotation motion.
c) An acceleration and a speed.
d) An acceleration.

47. The transfer of an aircraft from one ATC unit to another is done:

a) By agreement with the receiving unit
b) Through a central control unit
c) With the pilot's consent
d) Automatically at the control zone boundary

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

a) ED 50
b) ED 87
c) PZ 90
d) WGS 84

49. Which information shall a continuous VOLMET broadcast contain:

a) SIGMET
b) SPECI and TAF
c) Runway reports
d) Aviation routine weather reports (METAR) of specific airports

50. Given: Half way between two reporting points the navigation log gives the following information: TAS 360 kt, W/V 330°/80kt, Compass heading 237°, Deviation on this heading -5°, Variation 19°W. What is the average ground speed for this leg?

a) 354 kt
b) 373 kt
c) 403 kt
d) 360 kt

51. Given: Distance from departure to destination 1860 NM GS Out 360 kt GS Home 400 kt. What is the time of the PET from the departure point?

a) 132 min
b) 147 min
c) 163 min
d) 22 min

52. Other factors remaining constant and not limiting, how does increasing pressure altitude affect allowable take-off mass?

a) Allowable take-off mass increases
b) There is no effect on allowable take-off mass
c) Allowable take-off mass decreases
d) Allowable take-off mass remains uninfluenced up to 5000' pressure altitude

53. The passage of a warm front can be associated with areas of fog. The types of fog just in advance and just after the passage are respectively

a) Frontal fog and advection fog
b) Advection fog and steaming fog
c) Arctic smoke and frontal fog
d) Advection fog and radiation fog

54. The speed limitation for IFR flights inside ATS airspace classified as E, when flying below 3 050 m (10 000 ft) AMSL, is:

a) 250 KT IAS
b) 260 KT IAS
c) Not applicable
d) 250 KT TAS

55. In a discretised minimum-time isochrone calculation, a trial air-relative displacement is calculated for a time step Δt starting from the preceding ground isochrone. For wind that may vary along the trial segment, which displacement must be added to obtain the ground displacement?

a) The wind vector at the centre of the air isochrone multiplied by Δt, regardless of wind variation along the segment.

b) The wind vector at the endpoint alone multiplied by Δt, regardless of wind variation along the segment.

c) The wind vector at the original departure point multiplied by Δt, regardless of wind variation along the segment.

d) The mean wind vector along that trial segment from the preceding ground isochrone multiplied by Δt.

56. Take-off fuel is 160 kg, including the planned reserve. Halfway along the route, 70 kg remain. Assume actual fuel consumption per nautical mile will remain the same for the rest of the route. A suitable nearby alternate can be reached with the required arrival reserve. What should the pilot conclude?

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) The remaining fuel is insufficient to continue to the planned destination; the flight must be replanned and diverted to a suitable reachable aerodrome

57. In the conventional still-air aerodynamic model, with constant propulsion efficiency or specific fuel consumption and with neither optimum restricted by speed limits, the speed for maximum endurance:

a) Is the lower speed to achieve 99% of maximum specific range.

b) Can either be higher or lower than the speed for maximum specific range.

c) Is always lower than the speed for maximum specific range.

d) Is always higher than the speed for maximum specific range.

58. The correct formula to calculate the multi-cylinder engine displacement is:

a) Total cylinder volume at bottom dead centre, including clearance volume, multiplied by the number of cylinders

b) Piston area * piston stroke.

c) Cylinder length * cylinder diameter.

d) Piston area * piston stroke * number of cylinders.

59. An island appears 45° to the right of the centre line on an airborne weather radar display. What is the true bearing of the aircraft from the island if at the time of observation the aircraft was on a magnetic heading (MH) of 215° with the magnetic variation (VAR) 21°W?

a) 059°

b) 329°

c) 239°

d) 101°

60. Under the current EASA CAT III minima table, with a DH below 50 ft or no DH and a fail-operational roll-out control system, what is the tabulated minimum RVR, assuming no higher applicable minimum?

a) 150 m

b) 75 m

c) 200 m

d) 250 m

61. For the Boeing 737-300/-400/-500 flight-control arrangement, which statements about trimming are correct or incorrect? 1) Longitudinal trim changes the incidence of the horizontal stabilizer through its ballscrew actuator. 2) Aileron trim does not reposition the aileron centring mechanism.

a) 1) is incorrect, 2) is incorrect.

b) 1) is correct, 2) is incorrect.

c) 1) is incorrect, 2) is correct.

d) 1) is correct, 2) is correct.

62. Which flight-manoeuvre will most likely induce vertigo? Turning the head while

a) Banking

b) Flying straight and level

c) Descending

d) Climbing

63. The reason why the measured distance between a NAVSTAR/GPS satellite navigation system satellite and a receiver is called a 'Pseudo-Range' is because the:

a) Measured distance is based on the Pseudo Random Noise code

b) Movement of satellite and receiver during the distance calculation is not taken into account

c) Calculated range includes receiver clock error

d) Calculated range is based on an idealised Keplerian orbit

64. The maximum differential pressure of a transonic transport category aeroplane is approximately:

a) 13.5 psi

b) 3.5 psi

c) 15.5 psi

d) 9.0 psi

65. A performance class A turbojet aeroplane uses the EU basic fuel scheme without contingency-fuel variations. Taxi fuel is 600 kg. For this exercise, total trip fuel is calculated as 6 hours at 10000 kg/h. Destination alternate fuel is 10200 kg. The applicable holding fuel flow at 1500 ft above aerodrome elevation in standard conditions is 8000 kg/h for contingency and final reserve. No additional, extra or discretionary fuel is required. What is the minimum ramp fuel?

a) 79800 kg

b) 74800 kg

c) 77200 kg

d) 77800 kg

66. Where unaccompanied baggage is carried on board an aircraft:

a) The baggage is to be placed in a secure and isolated area in the baggage hold.

b) The baggage must be searched before loading aboard the aircraft.

c) Quarantine procedures are to be applied.

d) Additional security measures are to be applied.

67. If a symmetrical aerofoil is accelerated from subsonic to supersonic speed the aerodynamic centre will move

a) Aft to the mid of the chord.

b) Forward to the mid of the chord.

c) Forward to the leading edge.

d) Aft to the trailing edge.

68. For the EU basic fuel scheme for performance class A aeroplanes, when calculating the additional-fuel critical scenario after engine failure or loss of pressurisation, what holding allowance at the fuel en-route alternate is included before the approach and landing?

a) No holding allowance is included if the flight has already used contingency fuel

b) Enough fuel to reach a second destination alternate, without any holding allowance

c) 45 minutes at normal cruise consumption

d) 15 minutes at holding speed at 1500 ft above the fuel en-route alternate in standard conditions

69. An aircraft is flying under Instrument Flight Rules in an area where the visibility is unlimited and the sky is clear (free of clouds), when it totally loses radio communications. The procedure to be followed is:

a) Adopt a VFR flight level and continue flight onto destination

b) Land on the closest appropriate aerodrome, then advise Air Traffic Services of landing

c) Descend to En-route Minimum Safe Altitude and join closest airfield open to IFR operations

d) Continue flight onto destination, complying with last received clearances then with filed flight plan.

70. For a control system in which the pilot mechanically commands only a servo tab and airflow moves the freely hinged primary surface, with no control lock engaged, what is true during taxiing at low airspeed?

a) The primary surface angle is not fixed uniquely by the control-wheel position; it also depends on wind and aerodynamic loads.

b) The primary surface is held mechanically at the exact angle commanded by the control wheel, regardless of airflow.

c) The primary surface is always held exactly neutral by the servo tab, even in a tailwind.

d) The primary surface must remain at full deflection whenever the aeroplane is moving.

71. An aircraft at FL 100 should be able to receive a VOR groundstation at 100' above MSL at an approximate maximum range of:

a) 123 NM

b) 137 NM

c) 145 NM

d) 130 NM

72. In aeronautics, the most commonly used batteries are NiCd because:

a) They weigh less than lead-acid batteries.

b) They are cheaper than lead-acid batteries.

c) Their electrolyte is neither corrosive nor dangerous.

d) Their output voltage is less constant than lead-acid batteries.

73. For a CAT aeroplane first issued with an individual CofA on or after 1 April 1998, what automatic CVR recording coverage is required as a minimum, in addition to recording cockpit checks where electrical power is available?

a) When the parking brake is released until the termination of flight when the parking brake is set.

b) Prior to the aeroplane moving under its own power until the termination of the flight when the aeroplane is no longer capable of moving under its own power.

c) Prior to the aeroplane moving under its own power until the termination of flight when the parking brake is set.

d) When full thrust is applied until the termination of the flight when the aeroplane is no longer capable of moving under its own power.

74. During a Boeing 747-400 multiple-autopilot automatic landing with LAND 3 or LAND 2 annunciated, what pitch-mode transition occurs at approximately 50 ft radio altitude?

a) FLARE replaces the G/S pitch mode as the automatic flare begins

b) The G/S mode remains the sole pitch-control mode throughout the flare, without a FLARE transition

c) ALT HOLD replaces the approach pitch mode for the remaining descent to touchdown

d) G/S remains the selected pitch mode until the nose landing gear touches the runway

75. Which listed constellation supplies the GPS ranging signals used by a conventional aviation GPS installation approved for its intended IFR operation?

a) COSPAS-SARSAT

b) NNSS-Transit

c) GLONASS

d) NAVSTAR/GPS

76. A spring-return single-action hydraulic actuator:

a) Travels one direction under one application of hydraulic power and in the opposite direction under a second application of hydraulic power.

b) Cannot be used for variable position operations as it is designed to lock in the extremities of travel.

c) Is powered in one direction only by hydraulic power, the return movement being under spring force.

d) Is a one shot actuator used for emergency systems only.

77. Can the length of a stopway be added to the runway length to determine the take-off distance available?

a) Yes, but the stopway must be able to carry the weight of the aeroplane

b) No, unless its centreline is on the extended centreline of the runway

c) Yes, but the stopway must have the same width as the runway

d) No

78. The aeroplane drag in straight and level flight is lowest when the:

a) Induced drag is equal to zero

b) Parasite drag equals twice the induced drag

c) Induced drag is lowest

d) Parasite drag is equal to the induced drag

79. Which radio-height range best describes the extent of the basic Mode 1 excessive-descent-rate alert envelope illustrated in the Honeywell Mark V/Mark VII EGPWS pilot guide? The actual alert also depends on descent rate.

a) From close to ground level to approximately 2450 ft radio altitude

b) The ground to 500 ft

c) 30 ft to 5 000 ft

d) The ground to 1 000 ft

80. According to FAA guidance, after any SCUBA dive, how long should a pilot wait before a flight that will exceed 8000ftMSL(actual aircraft altitude, not pressurised cabin altitude)?

a) 12 hours

b) 6 hours

c) 48 hours

d) 24 hours

81. In regard to passengers briefing in commercial air transport aeroplane, information about oxygen must be given to passengers through a demonstration. If a flight is to be carried out at FL 290, this demonstration must be completed before:

a) The aircraft reaches FL 250.

b) The aircraft reaches FL 100.

c) Take-off.

d) The aircraft reaches FL 140.

82. Of the following alternatives, which effects are due to positive acceleration (+ Gz)? - 1: Decrease in heart rate - 2: Pooling of blood into lower parts of the body - 3: Drop in blood pressure above heart-level - 4: Downward displacement or deformation of soft or mobile organs

a) 1,2,3

b) 1

c) 2,3,4

d) 1,3,4

83. Separation Methods and Minima - General. What are the controlled traffic separation methods applied by ATC?

a) Vertical, horizontal and angular separation.

b) Time separation and track separation.

c) Vertical and horizontal separation.

d) Composite separation.

84. Which description best defines Basic Empty Mass in the mass terminology used in CAA CAP 696?

a) Basic mass plus variable equipment mass

b) Empty mass dry plus variable equipment mass

c) Basic mass plus special equipment mass

d) The aircraft in its basic configuration, including fixed equipment, unusable fuel and the standard fluids specified for that configuration.

85. The weight of an aircraft, which is in level non accelerated flight, is said to act

a) Vertically through the centre of pressure.

b) Vertically through the centre of gravity.

c) Always along the vertical axis of the aircraft.

d) Vertically through the datum point.

86. The convergence factor of a Lambert conformal conic chart is quoted as 0.78535. At what latitude on the chart is earth convergency correctly represented?

a) 80°39'

b) 52°05'

c) 38°15'

d) 51°45'

87. When the time is 2000 UTC, it is:

a) 1200 LMT at 60° East.

b) 2400 LMT at 120° West.

c) 0800 LMT at the Prime meridian.

d) 1400 LMT at 90° West.

88. The maximum operating altitude for a certain aeroplane with a pressurised cabin

a) Is dependent on aerodynamic ceiling.

b) Is the highest pressure altitude certified for normal operation.

c) Is only certified for four-engine aeroplanes.

d) Is dependent on the OAT.

89. ICAO Annex 9 recommends waiving the visa requirement for crew members arriving on another aircraft operator or another mode of transport, seeking temporary entry to join their assigned flight in a duty status. Which document is specified in that recommendation?

a) A Crew Member Certificate (CMC)

b) A valid flight crew licence.

c) Only a passport and visa, without a CMC

d) A temporary admission certificate issued by ICAO.

90. In ISA conditions, approximately what is the maximum theoretical range at which an aircraft at FL210 may expect to receive signals from a VOR facility sited 340 feet above mean sea level?

a) 245 NM

b) 204 NM

c) 183 NM

d) 163 NM

91. What does the phrase 'Squawk 1234' mean:

a) Make a test transmission on 123.4 MHz

b) Give a short count for DF (direction finder)

c) Standby on frequency 123.4 MHz

d) Select code 1234 on the SSR transponder

92. Divergence in the upper air results, near the surface, in:

a) Rising pressure and likely formation of clouds

b) Rising pressure and likely dissipation of clouds

c) Falling pressure and likely formation of clouds

d) Falling pressure and likely dissipation of clouds

93. The distance from the datum to the Centre of Gravity of a mass is known as

a) The moment arm or balance arm.

b) The index.

c) The moment.

d) The force.

94. Which altimeter subscale setting is used to indicate barometric altitude above mean sea level?

a) QFE

b) QNH

c) QNJ

d) QFF

95. If the combined cognitive demands of two simultaneous cockpit tasks exceed the pilot’s available capacity, what can happen?

a) Switching both tasks to knowledge-based behaviour is the only way to prevent any performance reduction.

b) Every combination of two tasks causes a performance loss, even when ample spare capacity is available.

c) Switching both tasks to rule-based behaviour is the only way to prevent any performance reduction.

d) Performance on one or both tasks can be impaired, requiring prioritisation or rescheduling of tasks.

96. The responsibility for determination of the mass of 'operating items' and 'crew members' included within the Dry Operating Mass lies with

a) The authority of the state of registration.

b) The commander.

c) The person compiling the weighing schedule.

d) The operator.

97. A ground VDF station reports magnetic QDM/QDR using its local magnetic declination. Those bearings are referenced to:

a) Magnetic north at the aircraft

b) True north at the aircraft

c) Magnetic north at the station

d) Relative bearing to the aircraft

98. With clear skies, light or calm wind and no change of air mass, when does the daily minimum surface air temperature generally occur over land?

a) Around local noon, when the solar elevation is greatest.

b) During the early evening, immediately after sunset.

c) During the middle of the night, regardless of when sunrise occurs.

d) Near or shortly after sunrise, before incoming solar energy outweighs the overnight cooling.

99. With zero wind, the angle of attack for maximum range for an aeroplane with turbojet engines is:

a) Lower than the angle of attack corresponding to maximum endurance

b) Equal to the angle of attack corresponding to maximum lift to drag ratio

c) Equal to the angle of attack corresponding to zero induced drag

d) Equal to the angle of attack corresponding to maximum endurance

100. At approximately what pressure altitude can hypoxia already impair night vision, leading FAA guidance to recommend supplemental oxygen above this level during night flight?

a) 25,000 ft.

b) 35,000 ft.

c) 5,000 ft.

d) 45,000 ft.

101. What is the advantage of a variable incidence tailplane over a fixed incidence tailplane with elevator and trim tab?

a) Linkages and mechanism less complicated.

b) Increased flight stability and less weight.

c) It can reduce trim drag and preserve more usable elevator travel by avoiding a large permanent elevator trim deflection.

d) Elevator movement is restricted at high speed.

102. A body is placed in a certain airstream. The density of the airstream decreases to half of the original value. The aerodynamic drag will decrease with a factor:

a) 8

b) 4

c) 1.4

d) 2

103. Which statement correctly describes MEL applicability?

a) The MEL applies only after the aircraft stops at the end of a flight.

b) It primarily governs dispatch with inoperative items before commencement of flight; its conditions continue to apply, and failures during taxi before take-off may require reassessment under the operator’s guidance and commander’s judgement.

c) It has no relevance before take-off and begins to apply only after the aircraft becomes airborne.

d) It replaces the abnormal and emergency checklists for every failure in flight.

104. Under current EU AIS requirements, what collective term covers AIP, amendments and supplements, NOTAM, AIC, aeronautical charts and digital data sets when available?

a) Only NOTAMs and Circulars.

b) Only AIP and NOTAMs.

c) Aeronautical information products

d) AIP, NOTAMs, Circular and AIRAC

105. When an aircraft is no longer in distress, it shall transmit a message cancelling the distress condition. Which words shall this message include?

a) ... MAYDAY, resuming normal operations

b) ... MAYDAY cancelled

c) ... cancel distress

d) ... distress condition terminated

106. The minimum equipment list (MEL) gives the equipment which can be inoperative when undertaking a flight and the additional procedures to be observed accordingly. This list is prepared by:

a) The operator, and it is inserted in the operations manual

b) The manufacturer, and it is appended to the flight manual

c) The operator, and it is appended to the flight manual

d) The manufacturer, and it is inserted in the operations manual

107. Which of the following lists are all errors that affect the accuracy and reliability of the Satellite-Assisted Navigation system (GNSS/GPS)?

a) Satellite mutual interference; satellite ephemeris; atmospheric propagation

b) Satellite to ground time lag; atmospheric propagation; satellite clock

c) Satellite clock; satellite ephemeris; atmospheric propagation

d) Satellite mutual interference; frequency drift; satellite to ground time lag

108. For this exercise, planned airborne trip time is 3 h 06 min, taxi fuel is 8 kg and block fuel is 118 kg. Block fuel consists only of taxi fuel, planned trip fuel and an initial reserve equal to 30% of planned trip fuel. Planned trip fuel flow is constant. The exercise requires a reserve of at least 30% of the remaining trip fuel at every point. After 2 hours airborne, what minimum trip fuel and reserve are required for the remaining flight, rounded to the nearest kg?

a) 39 kg trip fuel and 12 kg reserve fuel.

b) 30 kg trip fuel and 9 kg reserve fuel.

c) 39 kg trip fuel and no reserve fuel.

d) 27 kg trip fuel and 12 kg reserve fuel.

109. Given: Distance from departure to destination 140 NM GS Out 90 kt GS Home 80 kt What is the distance of the PET from the departure point?

a) 66 NM

b) 124 NM

c) 70 NM

d) 74 NM

110. 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) Continuous automatic position reporting using Global Positioning System (GPS) satellites and collision avoidance using TCAS II

111. The loaded centre of gravity (cg) of an aeroplane is 713 mm aft of datum. The mean aerodynamic chord lies between station 524 mm aft and 1706 mm aft. The cg expressed as% MAC (mean aerodynamic chord) is:

a) 60 %
b) 41 %
c) 10 %
d) 16 %

112. What cloud cover is typical for a wide warm sector of a polar front depression over Central Europe in the summer?

a) Sky clear
b) BKN CU and CB
c) ST with drizzle
d) Fair weather CU

113. In a conventional FMS, which database contains published company-route and procedure definitions that can be selected when building a flight plan?

a) Performance database
b) Air data database
c) Auto flight database
d) Navigation database

114. One method to compensate adverse yaw is:

a) A differential aileron.
b) A balance panel.
c) An anti-balance tab.
d) A balance tab.

115. What does the abbreviation 'FIR' mean?

a) Flight information required.
b) Flight information region.
c) Flight information radar.
d) Flow information received.

116. A climb gradient required is 3.3%. For an aircraft maintaining 100 KT true airspeed, no wind, this climb gradient corresponds to a rate of climb of approximately:

a) 3300 fpm

b) 330 fpm

c) 33.0 m/s

d) 3.30 m/s

117. Given: Pt: total pressure, Ps: static pressure, Pd: dynamic pressure. The altimeter is fed by:

a) Pt

b) Ps

c) Pd - Ps

d) Pd

118. For standard dry-runway performance class A turbojet dispatch, without reduced landing distance approval, what fraction of the LDA is the maximum permitted unfactored AFM landing distance from 50 ft?

a) 115/100

b) 1.67

c) 0.60

d) 60/115

119. In a conventional AC generation system, which combination describes the protective actions used to electrically isolate and de-excite a faulty generator?

a) Disconnect the generator output, while deliberately leaving its excitation energized

b) Open only the bus-tie connection, while leaving both generator output and excitation energized

c) Remove only generator excitation, while leaving the generator output connected to the distribution bus

d) Remove generator excitation and disconnect its output from the distribution bus, using the installed protective switching arrangement

120. Scanning at night should be performed by:

a) Slight eye movements to the side of the object

b) Avoiding food containing Vitamin A

c) Concentrated fixation on an object (image must fall on the fovea)

d) Scanning with one eye open

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Response Scheme

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

01: **D**	02: **B**	03: **C**	04: **B**
05: **B**	06: **C**	07: **C**	08: **B**
09: **B**	10: **B**	11: **D**	12: **B**
13: **C**	14: **A**	15: **A**	16: **B**
17: **B**	18: **C**	19: **B**	20: **C**
21: **C**	22: **C**	23: **D**	24: **C**
25: **A**	26: **B**	27: **D**	28: **C**
29: **C**	30: **A**	31: **A**	32: **D**
33: **A**	34: **C**	35: **B**	36: **A**
37: **C**	38: **C**	39: **C**	40: **C**
41: **C**	42: **B**	43: **C**	44: **C**
45: **A**	46: **A**	47: **A**	48: **D**
49: **D**	50: **C**	51: **C**	52: **C**
53: **A**	54: **A**	55: **D**	56: **D**
57: **C**	58: **D**	59: **A**	60: **B**
61: **B**	62: **A**	63: **C**	64: **D**
65: **D**	66: **D**	67: **A**	68: **D**
69: **B**	70: **A**	71: **B**	72: **A**
73: **B**	74: **A**	75: **D**	76: **C**
77: **D**	78: **D**	79: **A**	80: **D**
81: **C**	82: **C**	83: **C**	84: **D**

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85: **B**

86: **D**

87: **D**

88: **B**

89: **A**

90: **B**

91: **D**

92: **C**

93: **A**

94: **B**

95: **D**

96: **D**

97: **C**

98: **D**

99: **A**

100: **C**

101: **C**

102: **D**

103: **B**

104: **C**

105: **C**

106: **A**

107: **C**

108: **B**

109: **A**

110: **B**

111: **D**

112: **D**

113: **D**

114: **A**

115: **B**

116: **B**

117: **B**

118: **C**

119: **D**

120: **A**

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Response form

Use this form to mark your answers

01:	02:	03:	04:
05:	06:	07:	08:
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81:	82:	83:	84:

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85: _____ 86: _____ 87: _____ 88: _____

89: _____ 90: _____ 91: _____ 92: _____

93: _____ 94: _____ 95: _____ 96: _____

97: _____ 98: _____ 99: _____ 100: _____

101: _____ 102: _____ 103: _____ 104: _____

105: _____ 106: _____ 107: _____ 108: _____

109: _____ 110: _____ 111: _____ 112: _____

113: _____ 114: _____ 115: _____ 116: _____

117: _____ 118: _____ 119: _____ 120: _____

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