

Exam simulation

ATPL - Airline Transport Pilot license - Aircraft General Knowledge - Instrumentation



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STUDENT NAME:

DATE AND TIME:

01. If the QNH at Locarno (200 metres above sea level) is 1015 hPa, what is the approximate QFE?

- a) 995 hPa
- b) 990 hPa
- c) 1005 hPa
- d) 1000 hPa

02. Refer to Student Pilot Route Manual London, Heathrow (Plate 10- 3): Which of the following is a correct Minimum Safe Altitude (MSA) for the Airport?

- a) West sector 2300 ft within 25 NM
- b) East sector 2100 ft within 50 NM
- c) West sector 2100 ft within 25 NM
- d) East sector 2300 ft within 50 NM[see Annex]

03. The Basic Empty Mass is 4800 kg, the Dry Operating Mass is 5050 kg and the Zero Fuel Mass is 6210 kg. If the take-off mass is 8010 kg the useful load is:

- a) 3210 kg
- b) 2960 kg
- c) 1160 kg
- d) 1800 kg

04. 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.

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

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

06. What is the convergence at 50°00'N between the meridians 105°00'W and 145°00'W on the Earth?

- a) 32,1°
- b) 30,6°
- c) 40,0°
- d) 50,0°

07. Which of the following statements is (are) correct with regard to the advantages of computer flight plans ?1. The computer can file the ATC flight plan.2. Wind data used by the computer is always more up-to-date than that available to the pilot.

- a) Both statements
- b) Statement 2 only
- c) Neither statement
- d) Statement 1 only

08. The maximum rate of climb that can be maintained at the absolute ceiling is:

- a) 0 fpm
- b) 100 fpm
- c) 500 fpm
- d) 125 fpm

09. The documents for entry and departure of aircraft:

- a) Has to be typewritten
- b) Are accepted in hand-written block lettering in ink
- c) Are accepted at the contracting state discretion
- d) Has to be typewritten or produced by electronic data processing techniques

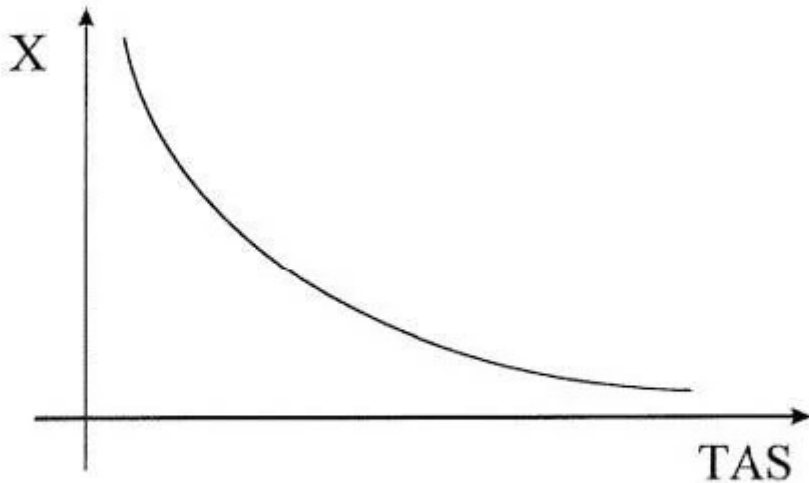
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10. The diagram shows the parameter X versus TAS. If a horizontal flight is considered the axis X shows



- a) The induced drag
- b) The parasite drag
- c) The lift force
- d) The total drag

11. 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

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12. If the pilot increases the reference pressure using the sub-scale setting knob, the altitude indicated by the altimeter:

- a) Decreases if QNH > 1013 hPa.
- b) Decreases if QNH < 1013 hPa.
- c) Increases.
- d) Decreases.

13. In temperate latitudes what weather conditions may be expected over land during the summer in the centre of a stationary high pressure zone?

- a) TS, SH
- b) CB, TS
- c) Calm winds, haze
- d) NS

14. Fuel flow per h is 22 US-GAL, total fuel on board is 83 IMP GAL. What is the endurance?

- a) 4 HR 32 MIN
- b) 2 HR 15 MIN
- c) 3 HR 53 MIN
- d) 3 HR 12 MIN

15. The horizontal component of the Earth's magnetic field:

- a) Weakens with increasing distance from the magnetic poles
- b) Weakens with increasing distance from the nearer magnetic pole
- c) Is stronger closer to the magnetic equator
- d) Is approximately the same at all magnetic latitudes less than 60°

16. Standard time is:

- a) The time enforced by the legal authority to be used in a country or an area.
- b) The time used at a particular meridian.
- c) The time most frequently used for air navigation.
- d) The time which is accepted and used as a standard for the whole world.

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

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

18. A SAFE LIFE aircraft structural component:

- a) Has Parallel Load Paths.
- b) May be used during a declared number of cycles or flight hours.
- c) Should have enough strength during the whole lifetime of an aircraft.
- d) Is So Strong That It Never Will Fail During A Declared Time Period.

19. Which of the following are medium level clouds ?

- a) Cirrocumulus and cirrostratus
- b) Altostratus and altocumulus
- c) All convective clouds
- d) Cumulonimbus

20. Given: true course (TC) 017 W/V 340/30TAS 420 kt Find: wind correction angle (WCA) and ground speed (GS)

- a) WCA +2° GS 396 kt
- b) WCA -2° GS 426 kt
- c) WCA -2° GS 396 kt
- d) WCA +2° GS 416 kt

21. Which statement is correct with respect to selections on the transponder control panel?

- a) The correct ICAO 24 bits aircraft address code must be inserted on the control panel.
- b) With the selector knobs the four digits of the squawk can be selected using the decimal symbols 0 through 9.
- c) With ALT selected a reply in the modes A, C and S can be transmitted.
- d) Range within "line of sight", and maximum of 200 NM

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22. The Maximum Zero Fuel Mass is a structural limiting mass. It is made up of the aeroplane Dry Operational mass plus

- a) Traffic load, non-revenue load and crew standard mass.
- b) Unuseable fuel and crew standard mass.
- c) Traffic load
- d) Traffic load and potable water.

23. What is the correct way of transmitting the number 118.1 to indicate a frequency?

- a) One one eight one
- b) One eighteen one
- c) One one eight point one
- d) One one eight decimal one

24. What lowest cloud conditions (oktas/ft) are forecast for JOHANNESBURG/JAN SMUTS at 0300 UTC?

- a) 5 to 7 at 400
- b) 3 to 4 at 400
- c) 5 to 7 at 800
- d) 3 to 4 at 800[see Annex]

25. On a Lambert conformal chart the distance between meridians 5° apart along latitude 37° North is 9 cm. The scale of the chart at that parallel approximates:

- a) 1 : 3 750 000
- b) 1 : 2 000 000
- c) 1 : 5 000 000
- d) 1 : 6 000 000

26. . The moment for an item is

- a) The mass of the item divided by it's distance from the datum
- b) The mass of the item multiplied by it's distance from the datum
- c) The square of the distance the item is from the datum divided by it's mass
- d) The distance the item is from the datum divided by it's mass

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27. The touchdown areas located at both ends of the runways are typical for the appearance of:

- a) Viscous hydroplaning
- b) Rubber steaming hydroplaning
- c) Rubber reversion hydroplaning
- d) Dynamic hydroplaning

28. A microburst phenomenon can arise in the:

- a) Downdraught of a cumulonimbus at the mature stage.
- b) Updraught of a cumulonimbus at the growth stage.
- c) Downdraught of a cumulonimbus at the initial stage.
- d) Updraught of a cumulonimbus at the mature stage.

29. What, if any, is the abbreviated call sign of Fastair 2345?

- a) Fastair 345
- b) No abbreviated form
- c) 2345
- d) Fastair 45

30. An aircraft is in cruising flight at FL 095, GS 155 KT. The pilot intends to descend at 500 fpm to arrive overhead the MAN VOR at 2000' (QNH 1030 hPa). The TAS remains constant in the descent, wind is negligible, temperature standard. At which distance from MAN should the pilot commence the descent?

- a) 48 NM
- b) 38 NM
- c) 41 NM
- d) 45 NM

31. To ensure correct load sharing between AC generators operating in parallel:

- a) The Matching Of Loads Is Unimportant.
- b) Only reactive loads need to be matched.
- c) Both real and reactive loads must be matched.
- d) Only Real Loads Need To Be Matched.

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32. Two identical turbojet aeroplane (whose specific fuel consumptions are considered to be equal) are at holding speed at the same altitude. The mass of the first aircraft is 130000 kg and its hourly fuel consumption is 4300 kg/h. The mass of the second aircraft is 115000 kg and its hourly fuel consumption is:

- a) 4044 kg / h
- b) 3365 kg / h
- c) 3804 kg / h
- d) 3578 kg / h

33. Standard Instrument Departure Procedures - Straight Departures A straight departure is one in which the initial departure track does not deviate from the alignment of the extended runway centre line by more than:

- a) 30°.
- b) 45°.
- c) 15°.
- d) 12.5°.

34. What is the influence of decreasing aeroplane weight on M_{crit} at constant IAS ?

- a) M_{crit} increases as a result of compressibility effects.
- b) M_{crit} increases as a result of flying at a smaller angle of attack.
- c) M_{crit} decreases as a result of flying at a greater angle of attack.
- d) M_{crit} decreases.

35. When a RADAR operator says the following to an aircraft: 'fly heading 030', the pilot must fly heading:

- a) 030° magnetic in still air conditions (thereby flying the magnetic track)
- b) 030° true
- c) 030° magnetic
- d) 030° true, in still air conditions (thereby flying the true track)

36. Positive g will cause the blood-pressure to the brain to:

- a) Increase
- b) Remain constant
- c) First increase, then decrease
- d) Decrease

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37. Refer to General Student Pilot Route Manual: In the ATC flight plan Item 10, 'standard equipment' is considered to be:

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- a) VHF RTF, ADF, VOR and transponder
- b) VHF RTF, ADF, VOR and ILS
- c) VHF RTF, VOR, INS and transponder
- d) VHF RTF, VOR, ILS and transponder

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38. Given: True course (TC) 017°, W/V 340°/30 kt, True air speed (TAS) 420 kt Find: Wind correction angle (WCA) and ground speed (GS)

- a) WCA -2°, GS 396 kt
- b) WCA +2°, GS 416 kt
- c) WCA -2°, GS 426 kt
- d) WCA +2°, GS 396 kt

39. Approach procedures - Minimum Sector Altitudes / MSAMinimum Sector Altitudes are established for each aerodrome. The MSA provides an obstacle clearance of at least 300m (984 ft) within a circle, associated with the homing facility for the approach procedure of that aerodrome. How many NM is the radius of this circle?

- a) 20 NM
- b) 25 NM
- c) 5 NM
- d) 10 NM

40. A flight control system which can, in the event of a failure, complete automatically the approach, flare and landing is called fail ...

- a) Passive.
- b) Soft.
- c) Operational.
- d) Hard.

41. Following an act of unlawful interference on board an aircraft, the commander should submit a report to:

- a) Both the local authority and the Authority of the State of the operator
- b) The Authority of the State within which the aircraft is operating at the time of the unlawful interference
- c) The Authority of the State of the operator only
- d) The local authority only

42. In a turn at a constant angle of bank, the turn indicator reading is:

- a) Independent to the aircraft true airspeed
- b) Proportional to the aircraft true airspeed
- c) Proportional to the aircraft weight
- d) Inversely proportional to the aircraft true airspeed

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43. Which one of the following statements concerning the formation of aircraft icing is most correct ?

- a) A cloud consisting of both supercooled water droplets and ice crystals produces aircraft icing
- b) Probability of icing increases when dry snow starts to fall from a cloud.
- c) Risk for icing increases when cloud temperature decreases well below minus 12 degrees
- d) Greatest risk of icing conditions is experienced in cirrus clouds.

44. 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.

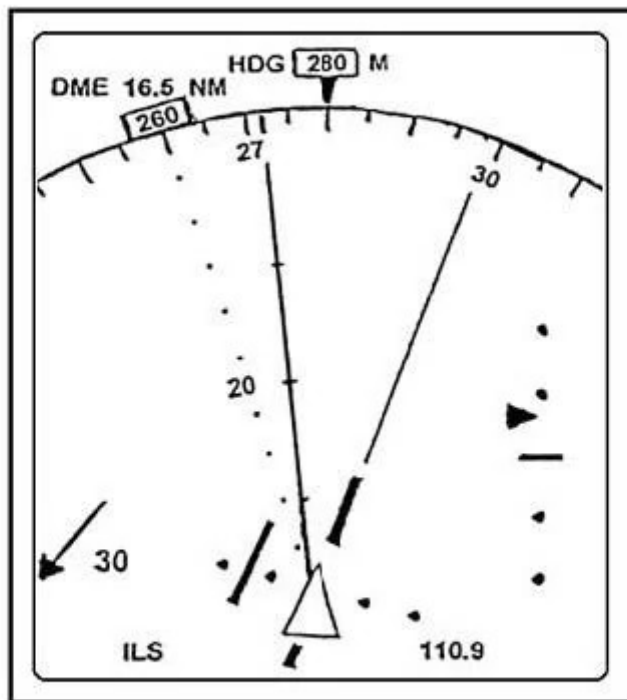
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45. The diagram indicates that the aircraft is to the:



- a) Left of the localizer and below the glidepath
- b) Right of the localizer and above the glidepath
- c) Left of the localizer and above the glidepath
- d) The frequencies employed are too high to give returns from moisture sources

46. The total gas volume of the lung is the sum of:1. tidal volume2. inspiratory reserve volume3. expiratory reserve volume4. residual volumeWhich of the following lists the correct combination?

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

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47. The result of a higher flap setting up to the optimum at take-off is:

- a) An increased acceleration
- b) A higher V1
- c) A shorter ground roll
- d) A longer take-off run

48. Under which of the following circumstances may you expect a solid reception of the TOWER frequency 118.2 MHz:

- a) Aircraft at high level in the vicinity of the ground station
- b) Aircraft at low level, in the vicinity of the ground station, in the radio shadow zone of a hill
- c) Aircraft at low level, far away from the ground station, in the radio shadow zone of a hill
- d) Aircraft at low level but far away from the ground station

49. Which of the following symptoms can mark the onset of hyperventilation?

- a) Slow rate of breathing
- b) Slow heart beat
- c) Cyanosis (blueing of lips and finger nails)
- d) Dizzy feeling

50. Urgency is defined as:

- a) A condition concerning the safety of an aircraft other vehicles or of a person on board, but which does not require immediate assistance
- b) A condition of being threatened by serious and/or imminent danger and of requiring immediate assistance
- c) A condition concerning the attitude of an aircraft when intercepting the localizer during an ILS approach
- d) A condition concerning the safety of a person on board or within sight and requiring immediate assistance

51. The elevators of a conventional airplane are used to provide rotation about the:

- a) Longitudinal Axis.
- b) Lateral axis.
- c) Vertical Axis.
- d) Directional Axis.

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52. AIP Which part contains a brief description of areas and/or routes for which meteorological service is provided?

- a) METEO
- b) ENR
- c) AD
- d) GEN

53. Given: Distance from departure to destination: 210 NM Endurance: 3,5 h True Track: 310 W/V: 270/30 TAS: 120 kt
What is the distance of the PSR from the departure point?

- a) 200 NM
- b) 10 NM
- c) 100 NM
- d) 125 NM

54. Which of the following is unlikely to have any effect on the position of the centre of gravity on an aeroplane in flight ?

- a) Changing the tailplane (horizontal stabiliser) incidence angle.
- b) Normal consumption of fuel for a swept wing aeroplane.
- c) Movement of cabin attendants going about their normal duties.
- d) Lowering the landing gear.

55. Assuming that the operator is approved by his national authorities, carriage of dangerous goods is allowed, provided that:

- a) The airline is approved to and complies with the technical instructions (ICAO DOC 9284)
- b) No passenger is carried on the same flight
- c) Government permission has been granted and compliance with the technical instructions
- d) National aviation administration permission has been granted

56. Interception, DAY or NIGHT Which manoeuvre will be executed by an intercepting aircraft if the pilot of this aircraft wants to communicate to the intercepted aircraft 'YOU MAY PROCEED'?

- a) Rocking aircraft twice in front of the intercepting aircraft, after acknowledgement by intercepted aircraft a slow level turn (normally to the left).
- b) An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.
- c) Rocking aircraft and flashing navigational lights at regular intervals.
- d) Circling the intercepted aircraft in a counter-clockwise pattern for aeroplanes, in a clockwise pattern for helicopter.

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57. Which one of the following correctly lists the major ground based components of a Microwave Landing System (MLS)?

- a) Separate azimuth and elevation transmitters, outer and middle marker beacons
- b) Separate azimuth and elevation transmitters, DME facility
- c) Combined azimuth and elevation transmitter, outer and inner marker beacons
- d) 140°

58. Check the following statements:1. The first information received determines how subsequent information will be evaluated.2. If one has made up one's mind, contradictory information may not get the attention it really needs.3. With increasing stress, channelizing attention is limiting the flow of information to the central decision maker (CNS).

- a) 1 and 3 are correct
- b) 1, 2 and 3 are correct
- c) 2 and 3 are correct
- d) 1 and 2 are correct

59. On an aircraft provided with resistance and capacitance variation type fire detection loops, a fire alarm is initiated by a temperature increase detected:

- a) Only At An Isolated Point Of The Loops
- b) Only in a uniform way along the loops
- c) At any isolated point of the loops or else generally on all the loops
- d) On At Least One Loop

60. An operator can operate an aeroplane certificated to JAR25, across an area in which search and rescue would be especially difficult, without additional survival equipment if it flies away from an area suitable for making an emergency landing at a distance corresponding to no more than:

- a) 90 minutes at cruising speed.
- b) 120 minutes at cruising speed.
- c) 30 minutes at cruising speed.
- d) 60 minutes at cruising speed.

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61. In a steep turn to the left, when using flight spoilers for roll assistance and at the same time for reducing the airspeed:

- a) The right aileron will descend, the left one will ascend, the right spoiler will retract and the left one Will extend.
- b) The Right Aileron Will Ascend, The Left One Will Descend, The Right Spoiler Will Retract And The Left One Will Extend.
- c) The Right Aileron Will Descend, The Left One Will Ascend, The Right Spoiler Will Extend And The Left One Will Retract.
- d) The Right Aileron Will Ascend, The Left One Will Descend, The Right Spoiler Will Extend And The Left One Will Retract.

62. What is the correct suffix to be used when establishing radio contact in an area control centre?

- a) Control
- b) Centre
- c) Control centre
- d) Radio

63. According EASA CS25 the worst effect of a HAZARDOUS Condition on the aeroplane could be:

- a) Hull Loss
- b) Slight reduction in functional capabilities or safety margins
- c) Large reduction in functional capabilities or safety margins
- d) Significant Reduction In Functional Capabilities Or Safety Margins

64. According to JAR-OPS, on an IFR flight a commander shall not commence take-off unless the expected weather conditions at the destination and/or required alternate aerodrome(s) are at or above:

- a) The aerodrome operating minima, at the estimated time of arrival, and for a reasonable period before and after such a predicted time.
- b) The planning minima, at the estimated time of arrival.
- c) The aerodrome operating minima, during a period from 1 hour before to 1 hour after the estimated time of arrival at the aerodrome.
- d) The planning minima, during a period from 1 hour before to 1 hour after the estimated time of arrival at the aerodrome.

65. In an inertial navigation system (INS), should the platform be displaced from the horizontal, it would oscillate with a period, called Schuler period, of about:

- a) 84 seconds.
- b) 64 seconds.
- c) 24 minutes.
- d) 84 minutes.

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66. Which elements of instructions or information shall always be read back ?

- a) Runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions
- b) Time check, runway-in-use, altimeter settings, level instructions, SSR codes
- c) Surface wind, visibility, ground temperature, runway-in-use, altimeter settings, heading and speed instructions
- d) Runway-in-use, visibility, surface wind, heading instructions, altimeter settings

67. The final reserve fuel for aeroplanes with turbine engines is

- a) Fuel to fly for 30 minutes at holding speed at 1500 ft (450 m) above aerodrome elevation in standard conditions.
- b) Fuel to fly for 60 minutes at holding speed at 1500 ft (450 m) above aerodrome elevation in standard conditions.
- c) Fuel to fly for 45 minutes at holding speed at 1000 ft (300 m) above aerodrome elevation in standard conditions.
- d) Fuel to fly for 45 minutes at holding speed at 1500 ft (450 m) above aerodrome elevation in standard conditions.

68. What does the word 'report' mean?

- a) Pass me the following information
- b) Examine a system or procedure
- c) Say again
- d) Repeat all of this message back to me exactly as received

69. Fire fighting in the toilets must be performed with:

- a) All available extinguishers in sequence
- b) All available liquids
- c) Only the extinguisher corresponding to the toilets
- d) All available extinguishers simultaneously

70. Which of the following represents the minimum for V1?

- a) VMU
- b) VLOF
- c) VR
- d) VMCG

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Response Scheme

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

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

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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: _____		