

Exam simulation

Quiz BPL Gas - Balloon Pilot License - Principles of Flight (Balloon)



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STUDENT NAME:

DATE AND TIME:

01. How does the norm height of a gas balloon with maximum differential pressure change, when its mass is reduced by 1%?

- a) Norm height increases by 800 m.
- b) Norm height decreases by 800 m.
- c) Norm height decreases by 80 m
- d) Norm height increases by 80 m.

02. Urgency messages are defined as...

- a) Messages concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance.
- b) Messages concerning urgent spare parts which are needed for a continuation of flight and which need to be ordered in advance.
- c) Messages concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight.
- d) Information concerning the apron personell and which imply an imminent danger to landing aircraft.

03. What phrase is used by a pilot to inform the tower about a go-around?

- a) Approach canceled
- b) Going around
- c) No landing
- d) Pulling up

04. The towing rope of a gas balloon can be found on ...

- a) The rip panel side
- b) The sandpouurer side
- c) The sliding side
- d) The entry side

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05. How many satellites are necessary for a precise and verified three-dimensional determination of the position?

- a) Four
- b) Five
- c) Two
- d) Three

06. The term "aerodrome elevation" is defined as...

- a) The highest point of the landing area
- b) The average value of the height of the manoeuvring area.
- c) The highest point of the apron
- d) The lowest point of the landing area.

07. What is the minimum flight visibility in airspace "C" for an aircraft operating under VFR at FL110?

- a) 1500 m
- b) 3000 m
- c) 8000 m
- d) 5000 m

08. How can wind speed and wind direction be derived from surface weather charts?

- a) By annotations from the text part of the chart
- b) By alignment of lines of warm- and cold fronts
- c) By alignment and distance of isobaric lines
- d) By alignment and distance of hypsometric lines

09. What effect can sudden insolation from sunlight have on a gas balloon?

- a) The height at maximum differential pressure decreases.
- b) The height at maximum differential pressure increases.
- c) The hull pressure decreases.
- d) A sudden increase in rate of descent.

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10. How does air temperature change in ISA from MSL to approx. 10.000 m height?

- a) From +30° to -40°C
- b) From -15° to 50°C
- c) From +15° to -50°C
- d) From +20° to -40°C

11. What has to be expected by the balloon pilot during descent in deeply cooled layers close to the ground?

- a) Floating on top of the cold air layer.
- b) Sudden change in airspeed.
- c) Balloon starts to climb.
- d) Increasing descent while entering to ground layers

12. At time of take-off, ground wind speed is 2 m/s. Along take-off flight path, at a distance of 320 m obstacles erect up to 30 m. What is the minimum rate of climb to keep a clearance of 50 m above the obstacles? (Consider double the ground wind speed for the flight path)

- a) 1 m/s
- b) 1.5 m/s
- c) 2 m/s
- d) 0.5 m/s

13. At time of take-off, ground wind speed is 3 m/s. Along take-off flight path, at a distance of 270 m obstacles erect up to 40 m. What is the minimum rate of climb to keep a clearance of 50 m above the obstacles? (Consider double the ground wind speed for the flight path)

- a) 1 m/s
- b) 2 m/s
- c) 1.5 m/s
- d) 0.5 m/s

14. What is the correct way of establishing radio communication between D-EAZF and Dusseldorf Tower?

- a) Dusseldorf Tower over
- b) DEAZF is calling Dusseldorf Tower
- c) Tower from D-EAZF
- d) Dusseldorf Tower D-EAZF

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15. With pressure and temperature given, any gas being heavier or lighter than air depends on what?

- a) On the content of water vapour in the gas
- b) On the mean kinetic energy of the molecules
- c) On the number of gas molecules
- d) On the molecule mass of the gas

16. Which of the following factors affects the reception of VHF transmissions?

- a) Altitude
- b) Twilight error
- c) Shoreline effect
- d) Height of ionosphere

17. In what cases is visibility transmitted in kilometers?

- a) Up to 5 km
- b) Greater than 5 km
- c) Up to 10 km
- d) Greater than 10 km

18. What is the meaning of a steady green light signal at a controlled aerodrome directed to an aircraft in flight?

- a) Airport unsafe, do not land
- b) Return for landing, followed by steady green at the appropriate time
- c) Cleared to land
- d) Give way to other aircraft and continue circling

19. What chart shows areas of precipitation?

- a) Radar picture
- b) GAFOR
- c) Wind chart
- d) Satellite picture

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20. Which transponder code should be set during a radio failure without any request?

- a) 7000
- b) 7500
- c) 7700
- d) 7600

21. Which factor can lead to human error?

- a) Double check of relevant actions
- b) To be doubtful if something looks unclear or ambiguous
- c) The bias to see what we expect to see
- d) Proper use of checklists

22. How can expanding filling gas be released in case the filling port of a gas balloon cannot be opened during cruise?

- a) By activating the pull rope
- b) Through the emergency opening
- c) By releasing the filling port cables
- d) By turning the Poeschelring

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23. (For this question, please use annex PFP-061) According ICAO, what symbol indicates a group of unlighted obstacles? Siehe Anlage 5



PFP-061

- a) C
- b) D
- c) B
- d) A

24. What conditions are mandatory for the formation of thermal thunderstorms?

- a) Absolutely stable atmosphere, high temperature and high humidity
- b) Absolutely stable atmosphere, high temperature and low humidity
- c) Conditionally unstable atmosphere, high temperature and high humidity
- d) Conditionally unstable atmosphere, low temperature and low humidity

25. The aerostatic lift corresponds to which force?

- a) The dynamic force due to airstream across the top of the hull
- b) The weight of the displaced air
- c) The drag due to airstream around the balloon envelope
- d) The weight of the balloon less ballast

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26. For what approximate time period can the short-time memory store information?

- a) 10 to 20 seconds
- b) 3 to 7 seconds
- c) 30 to 40 seconds
- d) 35 to 50 seconds

27. The standard state of gases refers to which temperature?

- a) 5° C
- b) 0° C
- c) 15° C
- d) 25° C

28. What is the correct way of acknowledging the instruction "DZF after lift-off climb straight ahead until 2500 feet before turning right heading 220 degrees, wind 090 degrees, 5 knots, runway 12, cleared for take-off"?

- a) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, runway 12, cleared for take-off
- b) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, 090 degrees, 5 knots, cleared for take-off
- c) DZF after lift-off climb straight ahead 2500 feet, wilco, heading 220 degrees, 090 degrees, 5 knots, cleared for take-off
- d) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, 090 degrees, 5 knots

29. What does the abbreviation "H24" stand for?

- a) 24 h service
- b) No specific opening times
- c) Sunrise to sunset
- d) Sunset to sunrise

30. Where does the inclination reach its lowest value?

- a) At the geographic equator
- b) At the magnetic poles
- c) At the magnetic equator
- d) At the geographic poles

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31. What effect has air temperature on the carrying force and on maximum take-off mass of a balloon?

- a) Maximum take-off mass is higher at low temperatures.
- b) Maximum take-off mass is lower at low temperatures.
- c) Carrying force is higher at low temperatures.
- d) Carrying force is lower at low temperatures.

32. Environmental air temperature and filling gas temperature are the same. Now, the free balloon descends into warmer air. What statement is correct?

- a) Descent force increases.
- b) Descent force decreases.
- c) Weight force increases.
- d) Weight force decreases.

33. A vertical speed indicator measures the difference between...

- a) Instantaneous total pressure and previous total pressure.
- b) Total pressure and static pressure
- c) Dynamic pressure and total pressure.
- d) Instantaneous static pressure and previous static pressure.

34. The movement of air flowing together is called...

- a) Subsidence.
- b) Convergence.
- c) Divergence.
- d) Soncordence.

35. What is the best combination of traits with respect to the individual attitude and behaviour for a pilot?

- a) Extroverted - stable
- b) Introverted - unstable
- c) Introverted - stable
- d) Extroverted - unstable

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36. What is the status of the rules and procedures created by the EASA? (e.g. Part-SFCL, Part-MED)

- a) They have the same status as ICAO Annexes
- b) They are not legally binding, they only serve as a guide
- c) They are part of the EU regulation and legally binding to all EU member states
- d) Only after a ratification by individual EU member states they are legally binding

37. A distance of 7.5 cm on an aeronautical chart represents a distance of 60.745 NM in reality. What is the chart scale?

- a) 1 : 500000
- b) 1 : 1500000
- c) 1 : 1 000000
- d) 1 : 150000

38. Which of the human senses is most influenced by hypoxia?

- a) The tactile perception (sense of touch)
- b) The olfactory perception (smell)
- c) The visual perception (vision)
- d) The auditory perception (hearing)

39. What is meant by the term "terrestrial navigation"?

- a) Orientation by instrument readings during visual flight
- b) Orientation by ground features during visual flight
- c) Orientation by GPS during visual flight
- d) Orientation by ground celestial object during visual flight

40. The measurement of altitude is based on the change of the...

- a) Dynamic pressure.
- b) Static pressure.
- c) Differential pressure.
- d) Total pressure.

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41. The term 'civil twilight' is defined as...

- a) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the true horizon.
- b) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the apparent horizon.
- c) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the true horizon.
- d) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the apparent horizon

42. Clouds in high layers are referred to as...

- a) Strato-
- b) Alto-
- c) Cirro-
- d) Nimbo-

43. Light turbulence always has to be expected...

- a) When entering inversions.
- b) Above cumulus clouds due to thermal convection.
- c) Below cumulus clouds due to thermal convection.
- d) Below stratiform clouds in medium layers.

44. The movement of air flowing apart is called...

- a) Divergence.
- b) Concordence.
- c) Convergence.
- d) Subsidence.

45. Why should balloon pilot or passengers not wear any clothes made of silk or synthetic fibers during ride with a gas balloon?

- a) Because of the danger of explosions induced by sparks after electrical discharge.
- b) Because these materials may lead to malfunction of some instruments.
- c) Because the total mass will be increased beyond the operating limits.
- d) Because these materials may lead to noise in radio reception.

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**46. (For this question, please use annex PFP-063) According ICAO, what symbol indicates a general spot elevation?
Siehe Anlage 7**

- A 300
- B (300)
- C • 1737
- D • 1737

PFP-063

- a) D
- b) B
- c) A
- d) C

47. In case of damage of the hull of a gas balloon, repairs have to be done by a certified Approved Aeronautical Workshop when exceeding a length of:

- a) 1.0 m
- b) 2.0 m
- c) 0.5 m
- d) 5.0 m

48. What distance corresponds to one degree difference in latitude along any degree of longitude?

- a) 60 km
- b) 30 NM
- c) 1 NM
- d) 60 NM

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49. What is the function of the red blood cells (erythrocytes)?

- a) Oxygen transport
- b) Immune defense
- c) Blood sugar regulation
- d) Blood coagulation

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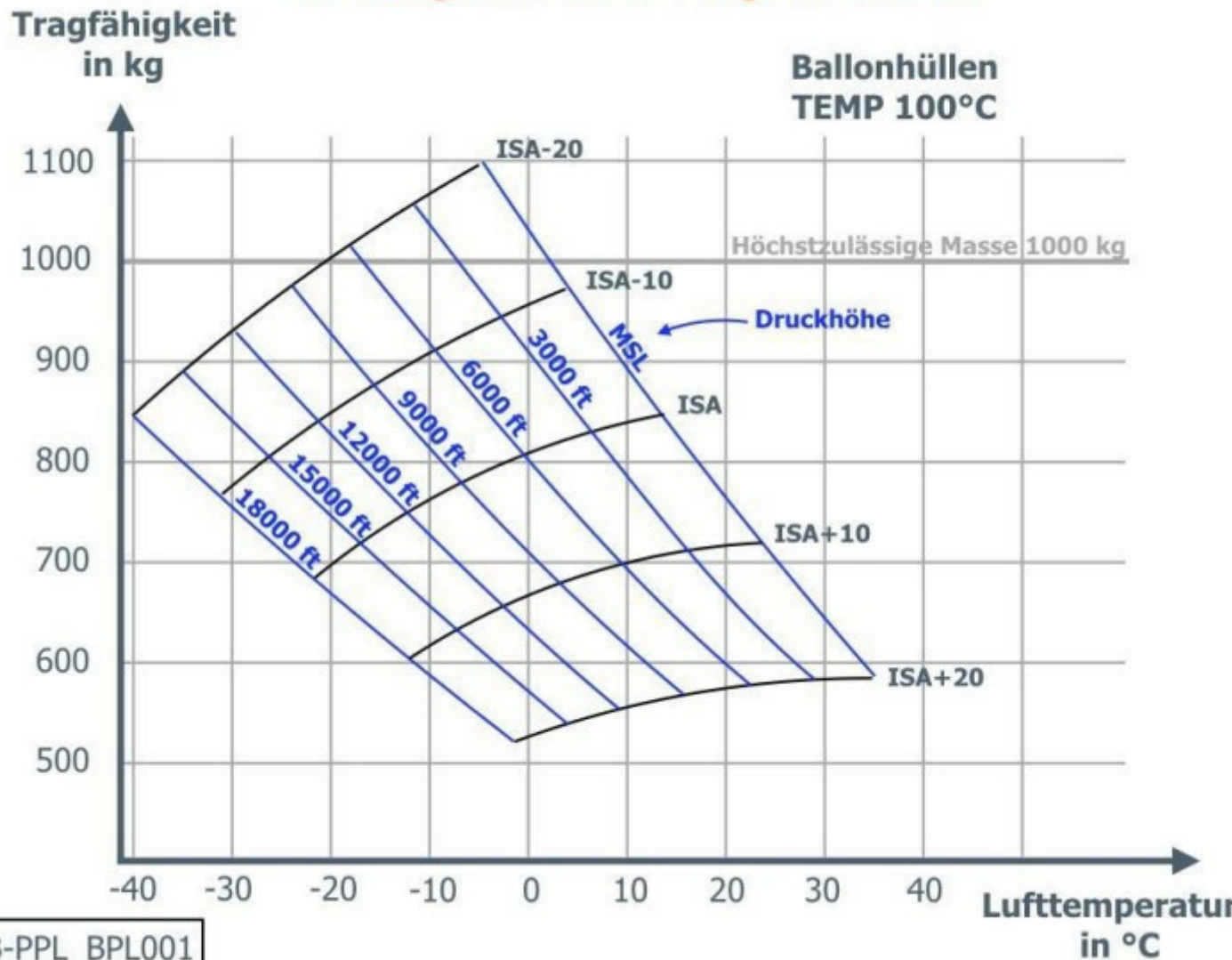
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50. Given the following masses: Empty mass 240 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg U which pressure altitude can the balloon climb with 5 persons and 4 gas containers in the basket, assuming temperatures below ISA? (use attachment ECQB-PPL_BPL001) Siehe Anlage 1

Auszug aus dem Flughandbuch



- a) 3000 ft
- b) 17000 ft
- c) 13000 ft
- d) 7000 ft

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51. Which air traffic services can be expected within an FIR (flight information region)?

- a) FIS (flight information service) ALR (alerting service)
- b) ATC (air traffic control) FIS (flight information service)
- c) AIS (aeronautical information service) SAR (search and rescue)
- d) ATC (air traffic control) AIS (aeronautical information service)

52. The ratio between air pressures at different heights is referred to as:

- a) Height value
- b) Pressure number
- c) Height ratio
- d) Height number

53. Which is the purpose of the altimeter subscale?

- a) To reference the altimeter reading to a predetermined level such as mean sea level, aerodrome level or pressure level 1013.25 hPa
- b) To adjust the altimeter reading for non-standard temperature
- c) To set the reference level for the altitude decoder of the transponder
- d) To correct the altimeter reading for system errors

54. What is the correct way of acknowledging "You are now entering airspace Delta"?

- a) Entering
- b) Airspace Delta
- c) Wilco
- d) Roger

55. A heading of 285 degrees is correctly transmitted as...

- a) Two hundred eighty-five
- b) Two eight five.
- c) Two eight five hundred
- d) Two hundred eight five.

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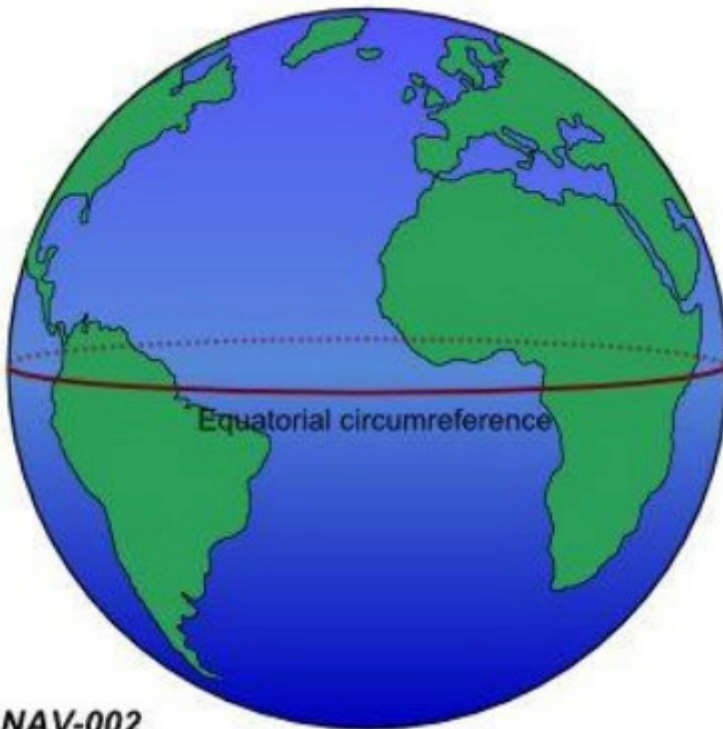
56. What is the difference in time when the sun moves 10° of longitude?

- a) 0:04 h
- b) 0:40 h
- c) 0:30 h
- d) 1:00 h

57. Where has the ballast aboard a gas balloon to be stored during cruise?

- a) Inside the basket
- b) Below the net ending ropes
- c) At the outside wall of the basket
- d) Inside the tow shield

58. The circumference of the Earth at the equator is approximately... See figure (NAV-002) Siehe Anlage 1



- a) 40000 NM
- b) 12800 km
- c) 10800 km.
- d) 21600 NM.

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59. UTC is...

- a) A local time in Central Europe
- b) A zonal time.
- c) Local mean time at a specific point on Earth.
- d) An obligatory time used in aviation.

60. What ground features should preferably be used for orientation during visual flight?

- a) Power lines
- b) Rivers, railroads, highways
- c) Border lines
- d) Farm tracks and creeks

61. Which stage of a thunderstorm is dominated by updrafts?

- a) Upwind stage
- b) Cumulus stage
- c) Mature stage
- d) Dissipating stage

62. What difference will be experienced during take-off in presence of a strong surface inversion, compared to a take-off with decreasing temperature with height?

- a) During climb through an inversion, less ballast must be released and/or less heating is required.
- b) During climb through an inversion, less ballast must be released and/or more heating is required.
- c) During climb through an inversion, more ballast must be released and/or more heating is required.
- d) During climb through an inversion, more ballast must be released and/or less heating is required.

63. What is the minimum flight visibility in airspace "C" below FL 100 for an aircraft operating under VFR?

- a) 5 km
- b) 1.5 km
- c) 10 km
- d) 8 km

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64. What is the distance between the parallels of latitude 48°N and 49°N along a meridian line?

- a) 10 NM
- b) 111 NM
- c) 60 NM
- d) 1 NM

65. The burst of a hydrogen pressure line may result in what risk?

- a) The risk of hydrogen collecting in the basket and causing breath shortness.
- b) The risk of hydrogen self-igniting and burning with a bright flame.
- c) The risk of hydrogen dissipating to the atmosphere and poisoning the air
- d) The risk of hydrogen self-igniting and burning with invisible flame.

66. The term 'isogonal' or 'isogonic line' is defined as a line on an aeronautical chart, connecting all points with the same value of...

- a) Variation
- b) Inclination.
- c) Heading.
- d) Deviation.

67. Cold air inflow in high tropospheric layers may result in...

- a) Stabilisation and calm weather
- b) Showers and thunderstorms.
- c) Calm weather and cloud dissipation.
- d) Frontal weather.

68. Which information from a ground station does not require readback?

- a) SSR-Code
- b) Wind
- c) Altitude
- d) Runway in use

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69. What statement is correct with regard to the density of a gas?

- a) The density increases with increasing temperature and constant volume.
- b) The density decreases with increasing temperature and constant volume.
- c) The density decreases with increasing temperature and constant pressure.
- d) The density decreases with decreasing volume and constant temperature.

70. Carbon monoxide poisoning can be caused by...

- a) Unhealthy food
- b) Alcohol.
- c) Smoking.
- d) Little sleep.

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Response Scheme

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

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