

Exam simulation

BPL Hot Air - Balloon Pilot License - Flight Performance and Planning



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STUDENT NAME:

DATE AND TIME:

01. During buildup of a hot-air balloon, who has to be equipped with tight, flame resistant gloves and clothing covering all body parts?

- a) Only the balloon pilot
- b) Balloon pilot, buildup team and spectators
- c) Only the buildup team
- d) The balloon pilot and the buildup team

02. What is the relationship between pressure and volume of a dry gas at constant temperature?

- a) The volume increases proportional with pressure
- b) The volume increases by a factor of 4 with double pressure
- c) The ratio between pressure and volume is constant
- d) The volume is inversely proportional to pressure

03. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are the TH and the DEV?

- a) TH: 194°. DEV: +002°
- b) TH: 172°. DEV: +002°
- c) TH: 172°. DEV: -002°
- d) TH: 194°. DEV: -002°

04. What is the correct way to transmit the call sign OE-JVK?

- a) Omega Echo Juliett Victor Kilogramm
- b) Omega Echo Jankee Victor Kilo
- c) Oscar Echo Juliett Victor Kilo
- d) Oscar Echo Jankee Victor Kilogramm

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05. The Empty Mass of a gas balloon includes:

- a) Ballast packages, basket, hull, valve and towing rope
- b) Basket, burner, ballast packages, hull, net and towing rope
- c) Basket, basket ring, valve, net, hull and towing rope
- d) Burner, ballast packages, instruments, net and towing rope

06. The aerostatic lift corresponds to which force?

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

07. What action has to be taken by the pilot of a hot-air balloon in case of fire on the ground? First action is to ...

- a) Make an emergency call via radio
- b) Leave from the area surrounding the burner
- c) Close the valves of the gas containers
- d) Engage the fire extinguishers

08. What is the meaning of the abbreviation "VMC"?

- a) Variable meteorological conditions
- b) Visual meteorological conditions
- c) Instrument flight conditions
- d) Visual flight rules

09. If heating is stopped and the parachute vent is not activated, a hot-air balloon reaches a final sinkrate of approximately:

- a) 6 m/s
- b) 2 m/s
- c) 10 m/s
- d) 20 m/s

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10. The carrying ropes of a hot-air balloon are made up from:

- a) Manila rope
- b) Stainless steel
- c) Copper
- d) Duralum

11. The majority of aviation accidents are caused by...

- a) Human failure
- b) Technical failure
- c) Geographical influences
- d) Meteorological influences

12. What is an indication for a macho attitude?

- a) Quick resignation in complex and critical situations
- b) Comprehensive risk assessment when faced with unfamiliar situations
- c) Careful walkaround procedure
- d) Risky flight maneuvers to impress spectators on ground

13. What is a latent error?

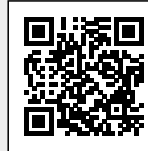
- a) An error which has an immediate effect on the controls
- b) An error which is made by the pilot actively and consciously
- c) An error which remains undetected in the system for a long time
- d) An error which only has consequences after landing

14. In case of a water landing, when should the life jackets be inflated?

- a) After landing, still in the basket, if leaving the basket has to be expected
- b) During cruise over water
- c) After leaving the basket
- d) Before touchdown on water surface

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15. While overflying a waypoint, it is stated that a distance of 3 NM has been taken 10 min. What will be the expected time of endurance for the remaining distance of 18 NM?

- a) 60 min
- b) 12 min
- c) 90 min
- d) 180 min

16. What is the meaning of the abbreviation "TRA"?

- a) Temporary Radar Routing Area
- b) Temporary Reserved Airspace
- c) Terminal Area
- d) Transponder Area

17. Air consists of oxygen, nitrogen and other gases. What is the approximate percentage of other gases?

- a) 1 %
- b) 21 %
- c) 0.1 %
- d) 78 %

18. What is the purpose of "interception lines" in visual navigation?

- a) They are used as easily recognizable guidance upon a possible loss of orientation
- b) To visualize the range limitation from the departure aerodrome
- c) They help to continue the flight when flight visibility drops below VFR minima
- d) To mark the next available en-route airport during the flight

19. Point A on the Earth's surface lies exactly on the parallel of latitude of 47°50'27"N. Which point is exactly 240 NM north of A?

- a) 53°50'27"N
- b) 49°50'27"N
- c) 43°50'27"N
- d) 51°50'27"N

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20. Which processes result in decreasing air density?

- a) Increasing temperature, increasing pressure
- b) Decreasing temperature, decreasing pressure
- c) Increasing temperature, decreasing pressure
- d) Decreasing temperature, increasing pressure

21. What pressure pattern can be observed when a cold front is passing?

- a) Continually decreasing pressure
- b) Shortly decreasing, thereafter increasing pressure
- c) Constant pressure pattern
- d) Continually increasing pressure

22. The term "ceiling" is defined as the...

- a) Height of the base of the highest layer of clouds covering more than half of the sky below 20000 ft
- b) Height of the base of the lowest layer of clouds covering more than half of the sky below 10000 ft
- c) Altitude of the base of the lowest layer of clouds covering more than half of the sky below 20000 ft
- d) Height of the base of the lowest layer of clouds covering more than half of the sky below 20000 ft

23. What action has to be considered by the pilot of a hot-air balloon with a double-burner installation, in case one burner valve fails?

- a) An emergency call should be made
- b) Both burner valves have to be shut down immediately
- c) The ride has to be stopped immediately
- d) The ride can be continued by use of the remaining burner

24. What can be expected for the prevailing wind with isobars on a surface weather chart showing large distances?

- a) Low pressure gradients resulting in low prevailing wind
- b) Strong pressure gradients resulting in strong prevailing wind
- c) Strong pressure gradients resulting in low prevailing wind
- d) Low pressure gradients resulting in strong prevailing wind

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25. How is an air mass described when moving to Central Europe via the Russian continent during winter?

- a) Continental polar air
- b) Continental tropical air
- c) Maritime tropical air
- d) Maritime polar air

26. What is the minimum flight visibility in airspace "C" at and above FL 100 for an aircraft operating under VFR?

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

27. What has to be considered when entering an RMZ?

- a) To obtain a clearance to enter this area
- b) The transponder has to be switched on Mode C and squawk 7000
- c) To permanently monitor the radio and if possible to establish radio contact
- d) To obtain a clearance from the local aviation authority

28. What is the meaning of the abbreviation "AIREP"?

- a) Aeronautical instrument requirement report
- b) Aircraft report
- c) Automatic identification report
- d) Aeronautical information report

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

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

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30. Mountain side updrafts can be intensified by ...

- a) Solar irradiation on the lee side
- b) Thermal radiation of the windward side during the night
- c) Solar irradiation on the windward side
- d) By warming of upper atmospheric layers

31. A transponder with the ability to send the current pressure level is a...

- a) Mode C or S transponder
- b) Mode A transponder
- c) Transponder approved for airspace "B"
- d) Pressure-decoder

32. What has to be done in case the balloon shows a strong tendency to climb while crossing thermals?

- a) It must be heated continuously to maintain hull temperature
- b) It must be heated stronger than usual
- c) The burner has to be cut off immediately
- d) The pull-rope has to be actuated immediately

33. The dynamic lift created by airflow across the top of the envelope of a balloon on the ground is referred to as?

- a) Lower lift
- b) Upper lift
- c) False lift
- d) Anti-ballast

34. What effect has an increase in air temperature inside the hull of a hot air balloon by a given difference in temperature?

- a) The increase in load carrying capacity increases with height
- b) The increase in load carrying capacity decreases with height
- c) The increase in rate of climb increases with height
- d) The reduction in sink rate increases with height

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35. Vienna (LOWW) is located at 016° 34'E, Salzburg (LOWS) at 013° 00'E. The latitude of both positions can be considered as equal. What is the difference of sunrise and sunset times, expressed in UTC, between Wien and Salzburg?

- a) In Vienna the sunrise and sunset are about 4 minutes later than in Salzburg
- b) In Vienna the sunrise and sunset are about 14 minutes earlier than in Salzburg
- c) In Vienna the sunrise is 4 minutes later and sunset is 4 minutes earlier than in Salzburg
- d) In Vienna the sunrise is 14 minutes earlier and sunset is 14 minutes later than in Salzburg

36. What cause may result in a reduction of volume of a free balloon?

- a) Reduction in mass
- b) A gust
- c) Cooling of environment air
- d) Increase in hull temperature

37. Urgency messages are messages...

- a) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance
- b) Concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight
- c) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation
- d) Sent by a pilot or an aircraft operating agency which have an imminent meaning for aircraft in flight

38. What is the meaning of the abbreviation "ARC"?

- a) Airspace Restriction Criteria
- b) Airworthiness Recurring Control
- c) Airworthiness Review Certificate
- d) Airspace Rulemaking Committee

39. Which gas is heavier than air?

- a) Hydrogen
- b) Propane
- c) Helium
- d) Illuminating gas

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40. The formation of medium to large precipitation particles requires...

- a) An inversion layer
- b) A high cloud base
- c) Strong wind
- d) Strong updrafts

41. The hull load of a hot-air balloon is carried by ...

- a) By the towing ropes
- b) By the top ropes
- c) The carrying ropes
- d) The fixing ropes

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

43. 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

44. A balloon pilot decides to use one or more separate gas containers for initial heating during buildup. To ensure a safe buildup ...

- a) To expedite take-off, the gas containers have to be stored outside
- b) The gas containers have to be fixed safely inside the basket
- c) No separate gas containers are allowed during buildup
- d) Two gas containers (one inside, one outside) are to be used

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45. Lower-than-standard temperature may lead to...

- a) An altitude indication which is too high
- b) An altitude indication which is too low
- c) A correct altitude indication as long as the altimeter subscale is set to correct for non-standard temperature
- d) A blockage of the Pitot tube by ice, freezing the altimeter indication to its present value

46. After take-off with a balloon, obstacles at a distance of 600 m erect in expected flight path up to 40 m height. Rate of climb is expected with 1.5 m/s. What maximum actual wind speed can be accepted to maintain a clearance of 50 m above obstacles, assuming double the actual wind speed for calculation?

- a) 1 m/s
- b) 3 m/s
- c) 5 m/s
- d) 10 m/s

47. Why should a liquid gas bottle only be filled to 80% of its volume?

- a) Because temperature would get too high
- b) Because it would get too heavy otherwise
- c) To provide space for temperature-induced expansion
- d) To provide space for expansion in case of external cooling

48. 1000 ft equal...

- a) 3000 m
- b) 300 m
- c) 30 km
- d) 30 m

49. Which weather phenomenon is typically associated with wind shear?

- a) Invernal warm front
- b) Stable high pressure areas
- c) Thunderstorms
- d) Fog

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50. Temperatures will be given by meteorological aviation services in Europe in which unit?

- a) Degrees Centigrade (° C)
- b) Degrees Fahrenheit
- c) Gpdam
- d) Kelvin

51. Which type of cloud is associated with prolonged rain?

- a) Light and heavy precipitation
- b) Rain and showers of rain
- c) Showers of snow and rain
- d) Prolonged rain and continuous rain

52. What information is provided in the part "AD" of the AIP?

- a) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods
- b) Table of content, classification of airfields with corresponding maps, approach charts, taxi charts
- c) Warnings for aviation, ATS airspaces and routes, restricted and dangerous airspaces
- d) Map icons, list of radio nav aids, time for sunrise and sunset, airport fees, air traffic control fees

53. What is the correct course of action when experiencing a radio failure in class D airspace?

- a) The flight has to be continued above 5000 feet complying with VFR flight rules or the airspace has to be left by the shortest route
- b) The flight has to be continued according to the last clearance complying with VFR flight rules or the airspace has to be left using a standard routing
- c) The flight has to be continued according to the last clearance complying with VFR rules or the airspace has to be left by the shortest route
- d) The flight has to be continued above 5000 feet complying with VFR flight rules or the airspace has to be left using a standard routing

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

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

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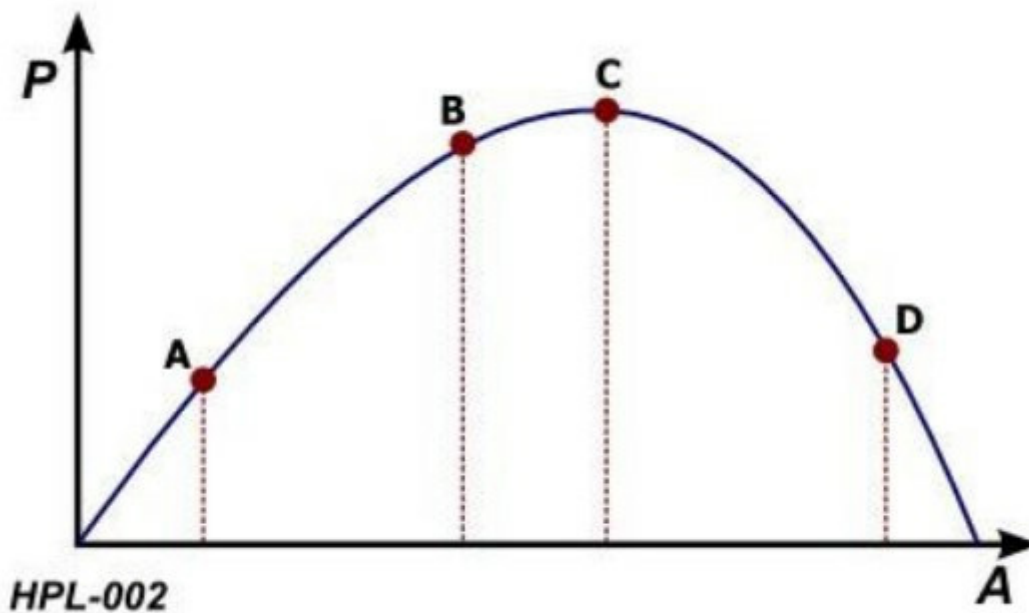
55. The measurement of altitude is based on the change of the...

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

56. The shortest distance between two points on Earth is represented by a part of...

- a) A small circle
- b) A great circle
- c) A rhumb line
- d) A parallel of latitude

57. The ideal level of arousal is at which point in the diagram? See figure (HPL-002) P = Performance A = Arousal / Stress



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

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58. The pressure at MSL in ISA conditions is...

- a) 1013.25 hPa
- b) 113.25 hPa
- c) 1123 hPa
- d) 15 hPa

59. Which answer contains every state of water found in the atmosphere?

- a) Liquid, solid, and gaseous
- b) Gaseous and liquid
- c) Liquid and solid
- d) Liquid

60. 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

61. On what frequency shall a blind transmission be made?

- a) On a tower frequency
- b) On a radar frequency of the lower airspace
- c) On the appropriate FIS frequency
- d) On the current frequency

62. What is the purpose of the semi-circular rule?

- a) To avoid collisions by suspending turning manoeuvres
- b) To fly without a filed flight plan in prescribed zones published in the AIP
- c) To avoid collisions by reducing the probability of opposing traffic at the same altitude
- d) To allow safe climbing or descending in a holding pattern

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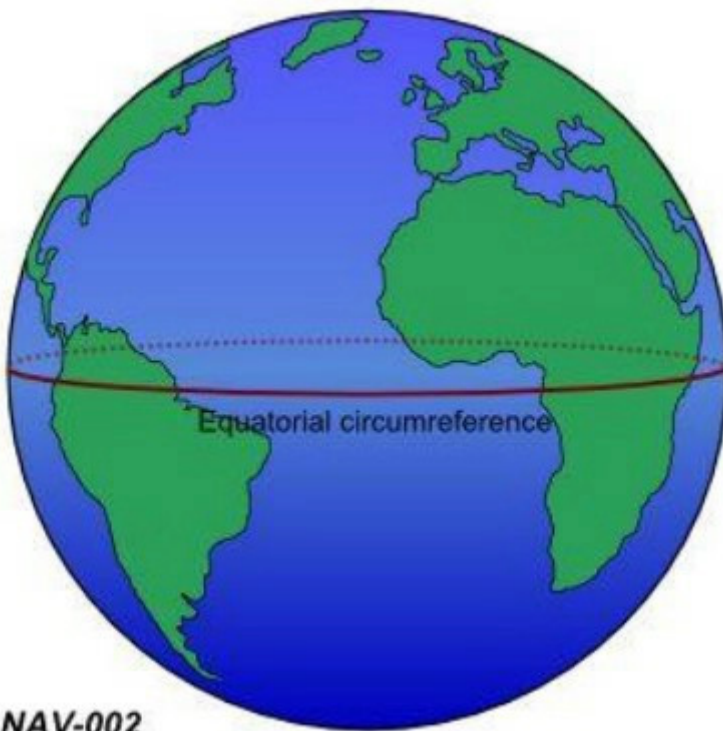


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63. Which factor can lead to human error?

- 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

64. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



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

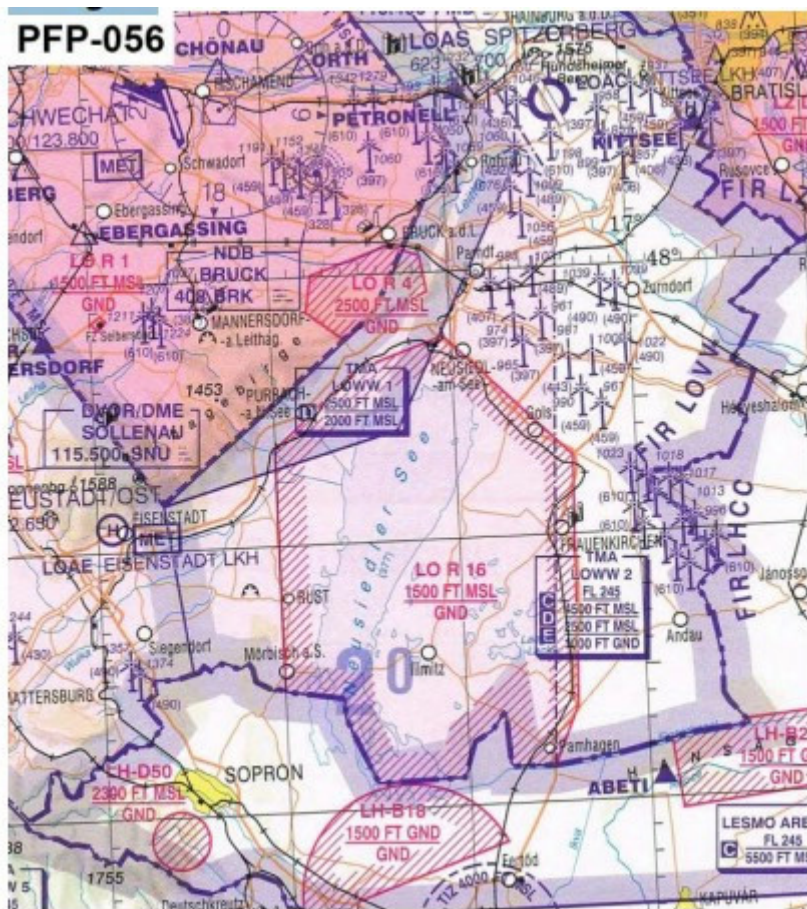
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65. The upper limit of LO R 16 equals... See annex (PFP-056)



- a) FL150
- b) 1500 ft GND
- c) 1500 ft MSL
- d) 1500 m MSL

66. During setup of a hot-air balloon, the hull is damaged with a hole with a size of 1.50 m x 1.00 m. Is Take-Off permitted?

- a) Yes, if all passengers agree
- b) Yes, if permitted by the operating handbook
- c) No, the hull has to be repaired first
- d) Yes, if loading is reduced

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67. What does the abbreviation "FIR" stand for?

- a) Flight integrity receiver
- b) Flow integrity required
- c) Flow information radar
- d) Flight information region

68. The term 'True Course' (TC) is defined as...

- a) The direction from an arbitrary point on Earth to the geographic North Pole
- b) The angle between true north and the course line
- c) The angle between magnetic north and the course line
- d) The direction from an arbitrary point on Earth to the magnetic north pole

69. What does a readability of 3 indicate?

- a) The transmission is readable now and then
- b) The transmission is unreadable
- c) The transmission is readable but with difficulty
- d) The transmission is perfectly readable

70. The stretch-out of the envelope of a hot-air balloon should be made:

- a) To the lee side of the basket
- b) To the windward side of the basket
- c) To the sunward side of the basket
- d) To the sun-averted side of the basket

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Response Scheme

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

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

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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: _____		