

# Exam simulation

Quiz BPL Gas - Balloon Pilot License - Operational Procedures



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STUDENT NAME:

DATE AND TIME:

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**01. Doubling the pressure of a dry gas at constant temperature results in a change of the volume to:**

- a) Double the previous value
- b) Four times the previous value.
- c) Half the previous value.
- d) A quarter of the previous value.

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**02. During a flight in colder-than-ISA air the indicated altitude is...**

- a) Higher than the true altitude
- b) Equal to the standard altitude.
- c) Lower than the true altitude.
- d) Equal to the true altitude.

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**03. 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

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**04. The minimum length of the towing rope is:**

- a) 20 m
- b) 50 m
- c) 100 m
- d) 30 m

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## 05. Visual illusions are mostly caused by...

- a) Misinterpretation of the brain.
- b) Binocular vision.
- c) Rapid eye movements.
- d) Colour blindness.

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## 06. What does the abbreviation "FIS" stand for?

- a) Flashing information service
- b) Flight information system
- c) Flashing information system
- d) Flight information service

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## 07. A gas balloon has to be equipped with which tethers?

- a) 1 at 40 m or 4 at 10 m
- b) 1 at 30 m or 3 at 10 m
- c) 2 at 10 m or 1 at 20 m
- d) 2 at 20 m or 1 at 10 m

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## 08. 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

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09. (For this question, please use annex PFP-062) According ICAO, what symbol indicates a civil airport (not international airport) with paved runway? Siehe Anlage 6

- A
- B
- C
- D

PFP-062

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

10. 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

11. What is the meaning of an area marked as "TMZ"?

- a) Touring Motorglider Zone
- b) Traffic Management Zone
- c) Transponder Mandatory Zone
- d) Transportation Management Zone

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**12. The force resulting from the (positive) difference from load-bearing capacity and weight force, is referred to as:**

- a) Load force
- b) Upper force
- c) Climb force
- d) Lift force

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**13. Which statement is correct with regard to the short-term memory?**

- a) It can store 5 ( $\pm 2$ ) items for 1 to 2 minutes
- b) It can store 3 ( $\pm 1$ ) items for 5 to 10 seconds
- c) It can store 7 ( $\pm 2$ ) items for 10 to 20 seconds
- d) It can store 10 ( $\pm 5$ ) items for 30 to 60 seconds

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**14. What factors are required for the formation of precipitation in clouds?**

- a) High humidity and high temperatures
- b) The presence of an inversion layer
- c) Calm winds and intensive sunlight insolation
- d) Moderate to strong updrafts

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**15. A risk factor for decompression sickness is...**

- a) Scuba diving prior to flight
- b) 100 % oxygen after decompression.
- c) Sports
- d) Smoking.

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**16. The formation of medium to large precipitation particles requires...**

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

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## 17. What kind of information should be included in an urgency message?

- a) Nature of problem or observation, important information for support, departure aerodrome, information about position, heading and altitude
- b) Intended routing, important information for support, intentions of the pilot, departure aerodrome, destination aerodrome, heading and altitude
- c) Intended routing, important information for support, intentions of the pilot, information about position, departure aerodrome, heading and altitude
- d) Nature of problem or observation, important information for support, intentions of the pilot, information about position, heading and altitude

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## 18. Under which circumstances is it more likely to accept higher risks?

- a) During check flights due to a high level of nervousness
- b) During flight planning when excellent weather is forecast
- c) Due to group-dynamic effects
- d) If there is not enough information available

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## 19. "Foehn" conditions usually develop with...

- a) Instability, widespread air blown against a mountain ridge
- b) Stability, widespread air blown against a mountain ridge.
- c) Stability, high pressure area with calm wind.
- d) Instability, high pressure area with calm wind.

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## 20. Information about operational limits, loading and performance about an aircraft can be taken from which document?

- a) Airworthiness certificate.
- b) Operating handbook.
- c) Certificate of registration
- d) Flight Log book.

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## 21. The term "static pressure" is defined as pressure...

- a) Resulting from orderly flow of air particles.
- b) Inside the airplane cabin.
- c) Sensed by the pitot tube.
- d) Of undisturbed airflow.

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## 22. How does the norm height of a gas balloon with maximum differential pressure change by dropping ballast?

- a) It increases by 8 m when total mass is reduced by 10%.
- b) It increases by 80 m when total mass is reduced by 1%
- c) It decreases by 8 m when total mass is reduced by 10%.
- d) It decreases by 80 m when total mass is reduced by 1%.

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## 23. 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.

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## 24. The standard state of gases refers to which temperature?

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

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## 25. 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)

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## 26. What has to be expected during descent above a heated water surface?

- a) The rate of descent decreases.
- b) The horizontal speed decreases.
- c) The horizontal speed increases.
- d) The rate of descent increases.

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**27. 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 complete distance of 18 NM?**

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

**28. What effect has the elevation above MSL of an airfield on the carrying force and maximum take-off mass of a balloon?**

- a) The higher the elevation, the lower the carrying force.
- b) The lower the elevation, the lower the maximum take-off mass.
- c) The lower the elevation, the higher the maximum take-off mass.
- d) The higher the elevation, the greater the carrying force.

**29. 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.

**30. 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.

**31. What is the purpose of the signal square at an aerodrome?**

- a) It is a specially marked area to pick up or drop towing objects
- b) It is an illuminated area on which search and rescue and fire fighting vehicles are placed
- c) It contains special symbols to indicate the conditions at the aerodrome visually to over-flying aircraft
- d) Aircraft taxi to this square to get light signals for taxi and take-off clearance

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## 32. What has to be considered before a balloon ride across water surfaces?

- a) A transponder has to be installed and carried aboard
- b) For all people inside the basket life jackets have to be carried aboard
- c) A flight plan with detailed routing has to be filed.
- d) Continuous radio communication has to be established with air traffic control

## 33. Up to which altitude is an overflight prohibited according to the NOTAM? See figure (PFP-024) Siehe Anlage 4

A4604/11 NOTAMN

Q)

EDWW/QROLP/IV/NBO/W/000/095/5155N01037E004

A) EDWW  
B) 1111180800 C) 1111181200  
E) OVERFLYING PROHIBITED FOR ALL TRAFFIC RADIUS  
3.35NM CENTERED AROUND 515436N 0103725E DUE  
TO DEMOLITION OF EXPLOSIVES AT ECKERTHAL,  
(25NM S BRAUNSCHWEIG NDB BRU).  
F) GND  
G) 9500 FT AMSL

- a) Flight Level 95
- b) Altitude 9500 m MSL
- c) Height 9500 ft
- d) Altitude 9500 ft MSL

## 34. Before buildup, the buildup team has to be informed about correct behaviour at sudden critical situations how?

- a) Only at gusty winds
- b) Twice
- c) At least two days before
- d) By the balloon pilot

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**35. In case of radio communication failure within a CTR (control zone), the pilot has to ...**

- a) This has no consequences while in VMC
- b) Maintain current altitude until leaving the control zone.
- c) Squawk transponer code A 7500.
- d) Continue the ride according to last clearance; in case of imminent danger land immediately

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**36. 1000 ft equal...**

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

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**37. What is the meaning of the abbreviation "SERA"?**

- a) Selective Radar Altimeter
- b) Standard European Routes of the Air
- c) Specialized Radar Approach
- d) Standardized European Rules of the Air

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**38. What is the approximate speed of electromagnetic wave propagation?**

- a) 300000 m/s
- b) 123000 m/s
- c) 300000 km/s
- d) 123000 km/s

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**39. Which of the stated surfaces will reduce the wind speed most due to ground friction?**

- a) Flat land, lots of vegetation cover
- b) Oceanic areas
- c) Mountainous areas, vegetation cover
- d) Flat land, deserted land, no vegetation

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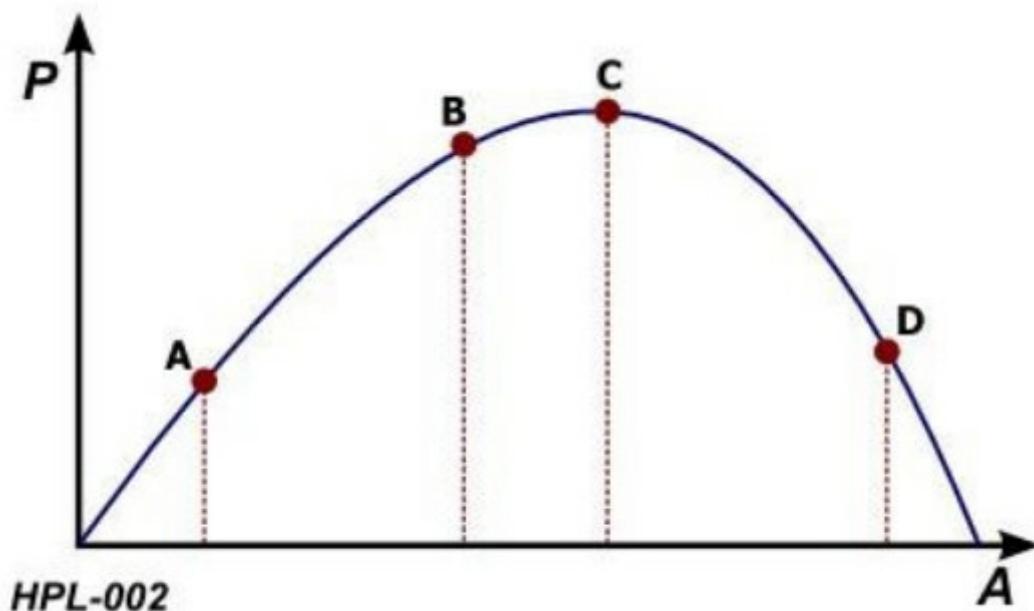
## 40. Aerostatic lift, amongst other factors, depends on...

- a) On the speed.
- b) Balloon mass.
- c) Shape of the envelope.
- d) Air density.

## 41. Where can the type of restriction for a restricted airspace be found?

- a) ICAO chart 1:500000
- b) NOTAM
- c) AIC
- d) AIP

## 42. The ideal level of arousal is at which point in the diagram? See figure (HPL- 002) P = Performance A = Arousal / Stress Siehe Anlage 1



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

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## 43. 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

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## 44. A vertical speed indicator connected to a too big equalizing tank results in...

- a) Mechanical overload
- b) No indication
- c) Indication too low
- d) Indication too high

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## 45. 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

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

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

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## 47. At time of take-off, ground wind speed is 3 m/s. Along take-off flight path, at a distance of 360 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) 0.5 m/s
- d) 1.5 m/s

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**48. In a given height, a given amount of ballast is unloaded from a gas balloon. How is the increase in height at 5500m different from the increase in height at MSL by unloading the same amount of ballast?**

- a) At 5500m the increase in height is twice as high.
- b) At 5500m the increase in height is three times as high.
- c) At both heights the same increase in height is observed.
- d) At 5500m the increase in height is four times as high.

**49. The vertical extend of air with pressure changing by 1% with 80 m difference in height is referred to as ...**

- a) Unstable
- b) Homogene
- c) Stable
- d) Inhomogene

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

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

**51. How will the sag of the pull rope change during descent?**

- a) It will remain unchanged
- b) It will increase
- c) It will change periodically
- d) It will decrease

**52. With Central European Time (CET) given as UTC+1, what UTC time corresponds to 1700 CET?**

- a) 1600 UTC
- b) 1800 UTC.
- c) 1500 UTC.
- d) 1700 UTC.

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## 53. What cloud sequence can typically be observed during the passage of a warm front?

- a) Squall line with showers of rain and thunderstorms (Cb), gusting wind followed by cumulus clouds with isolated showers of rain
- b) Wind becoming calm, dissipation of clouds and warming during summer; formation of extended high fog layers during winter
- c) Cirrus, thickening altostratus and altocumulus clouds, lowering cloud base with rain, nimbostratus
- d) In coastal areas during daytime wind from the coast and forming of cumulus clouds, dissipation of clouds during evening and night

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## 54. How can the vents be checked before take-off with a gas balloon?

- a) Connecting the filling nozzle with the static line loop.
- b) Strongly shaking the vent rope
- c) Perform a valve slide
- d) Check if the ropes are clear and working.

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## 55. What situation may result in the occurrence of severe wind shear?

- a) When a shower is visible close to the airfield
- b) Cross-country flying below Cu clouds with about 4 octas coverage
- c) During final approach, 30 min after a heavy shower has passed the airfield
- d) Flying ahead of a warm front with visible Ci clouds

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## 56. What values are usually marked with a red line on instrument displays?

- a) Operational limits
- b) Caution areas
- c) Recommended areas
- d) Operational areas

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## 57. How does a gas react when released from a pressurized container?

- a) The gas heats adiabatically due to expansion
- b) The gas cools adiabatically due to expansion.
- c) The gas condenses inside the envelope
- d) The gas cools due to thermal contact with environmental air.

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**58. What is the minimum flight visibility in airspace "E" for an aircraft operating under VFR at FL75?**

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

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

- A
- B
- C
- D

PFP-061

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

**60. What is the difference in latitude between A (12°53'30"N) and B (07°34'30"S)?**

- a) 05°19'00"
- b) 20°28'00"
- c) 20,28°
- d) 05,19°

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## 61. In what case is visibility transmitted in meters?

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

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## 62. What is the distance between the two parallels of longitude 150°E and 151°E along the equator?

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

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## 63. Which are the properties of a Lambert conformal chart?

- a) The chart is conformal and nearly true to scale
- b) Great circles are depicted as straight lines and the chart is an equal-area projection
- c) Rhumb lines are depicted as straight lines and the chart is conformal
- d) The chart is conformal and an equal-area projection

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## 64. 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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## 65. Wake turbulence is particularly strong...

- a) When flying at high speeds.
- b) When flying at high altitudes.
- c) When flying at low speeds
- d) When flying at low altitudes.

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## 66. The barometric altimeter with QNH setting indicates...

- a) Height above the pressure level at airfield elevation.
- b) Height above standard pressure 1013.25 hPa.
- c) True altitude above MSL.
- d) Height above MSL.

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## 67. 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.

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## 68. 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

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## 69. What is the gas composition of "air"?

- a) Oxygen 78 % Water vapour 21 % Nitrogen 1 %
- b) Oxygen 21 % Water vapour 78 % Noble gases / carbon dioxide 1 %
- c) Nitrogen 21 % Oxygen 78 % Noble gases / carbon dioxide 1 %
- d) Oxygen 21 % Nitrogen 78 % Noble gases / carbon dioxide 1 %

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## 70. 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

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## Response Scheme

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

01: **C**

02: **A**

03: **A**

04: **D**

05: **A**

06: **D**

07: **C**

08: **A**

09: **D**

10: **A**

11: **C**

12: **C**

13: **C**

14: **D**

15: **A**

16: **D**

17: **D**

18: **C**

19: **B**

20: **B**

21: **D**

22: **B**

23: **A**

24: **C**

25: **A**

26: **D**

27: **A**

28: **A**

29: **C**

30: **A**

31: **C**

32: **B**

33: **D**

34: **D**

35: **D**

36: **B**

37: **D**

38: **C**

39: **C**

40: **D**

41: **D**

42: **D**

43: **B**

44: **D**

45: **C**

46: **A**

47: **D**

48: **A**

49: **B**

50: **D**

51: **D**

52: **A**

53: **C**

54: **C**

55: **A**

56: **A**

57: **B**

58: **D**

59: **A**

60: **B**

61: **D**

62: **A**

63: **A**

64: **A**

65: **C**

66: **D**

67: **B**

68: **C**

69: **D**

70: **A**

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## Response form

Use this form to mark your answers

01: \_\_\_\_\_

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