

# Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Aircraft General Knowledge



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STUDENT NAME:

DATE AND TIME:

## 01. Changing the shape of the envelope of a free balloon, e.g. by a gust, results in:

- a) Increase in lift.
- b) Decrease in volume
- c) Increase of displaced air.
- d) Decrease in weight.

## 02. 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.

## 03. The electronic remote hull thermometer of a hot-air balloon is operating by which principle?

- a) Venturi principle
- b) Boyle principle.
- c) Resistance- / Semiconductor principle.
- d) Bernoulli principle.

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04. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming ISA temperatures, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 9.000 ft ? (use attachment ECQB-PPL\_BPL001) Siehe Anlage 1

## Auszug aus dem Flughandbuch



- a) 4
- b) 5
- c) 2
- d) 3

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**05. The final sinkrate of a hot-air balloon is achieved after descent over a vertical distance of:**

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- a) 1000 - 2000 m
- b) 50 - 100 m
- c) 250 - 450 m
- d) 500 - 1000 m

**06. A flight level is a...**

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- a) True altitude
- b) Density altitude.
- c) Pressure altitude.
- d) Altitude above ground.

**07. Which factor can lead to human error?**

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- 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

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

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

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

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

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**10. In which way may an altimeter subscale which is set to an incorrect QNH lead to an incorrect altimeter reading?**

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- a) If the subscale is set to a lower than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended
- b) If the subscale is set to a lower than actual pressure, the indication is too low. This may lead to much closer proximity to the ground than intended
- c) If the subscale is set to a higher than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended
- d) If the subscale is set to a higher than actual pressure, the indication is too low. This may lead to much greater heights above the ground than intended

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**11. 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? (2,00 P.)**

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- 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

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**12. In which situation is it NOT possible to achieve a pressure compensation between the middle ear and the environment?**

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- a) During a light and slow climb
- b) Breathing takes place using the mouth only
- c) The eustachien tube is blocked
- d) All windows are completely closed

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**13. Measured pressure distribution in MSL and corresponding frontal systems are displayed by the...**

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- a) Significant Weather Chart (SWC)
- b) Prognostic chart
- c) Surface weather chart.
- d) Hypsometric chart.

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**14. What are primary criteria for selecting a landing site? 1. Obstacle situation 2. Elevation of the site 3. Strength of surface wind**

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

**15. Which statement is correct with regard to the polar axis of the Earth?**

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- a) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is at an angle of  $23.5^\circ$  to the plane of the equator
- b) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is perpendicular to the plane of the equator
- c) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is perpendicular to the plane of the equator
- d) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is at an angle of  $66.5^\circ$  to the plane of the equator

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

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

**17. An aircraft travels 100 km in 56 minutes. The ground speed (GS) equals...**

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- a) 93 kt.
- b) 198 kt.
- c) 107 km/h.
- d) 58 km/h.

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

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- 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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## 19. What is an indication for a macho attitude?

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- 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

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

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- 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

## 21. What is the percentage of oxygen in the atmosphere at 6000 ft?

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- a) 78 %
- b) 21 %
- c) 12 %
- d) 18.9 %

## 22. The term 'civil twilight' is defined as...

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- 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.

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

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- 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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**24. At equilibrium the inner overpressure of a free balloon is highest at:**

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- a) At the lower opening.
- b) The upper pole.
- c) At the center of the hull.
- d) At the equator.

**25. Which validity does the "Certificate of Airworthiness" have?**

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- a) 12 years
- b) 12 months
- c) Unlimited
- d) 6 months

**26. Which wind system may be dangerous for balloon rides in the Alps?**

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- a) Bora
- b) Scirocco
- c) Mistra
- d) Foehn

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

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

**28. The increase in load carrying capability by increasing the hull air temperature by the same temperature difference ...**

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- a) Increases with balloon mass.
- b) Increases with altitude.
- c) Decreases with sinking.
- d) Decreases with altitude.

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## 29. What information is provided in the general part (GEN) of the AIP?

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- a) What information is provided in the general part (GEN) of the AIP?
- b) Map icons, list of radio nav aids, time for sunrise and sunset, airport fees, air traffic control fees
- c) Table of content, classification of airfields with corresponding maps, approach charts, taxi charts, restricted and dangerous airspace
- d) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods

## 30. Which of the following statements is correct?

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- a) At higher altitude, sink rate in case of cooling is increased due to less drag by less density.
- b) At higher altitude, sink rate by cooling is not increased because due to low density the mass inside the hull is also less.
- c) Higher drag at higher altitude prevents increased sink rate in case of cooling.
- d) Maximum sink rate must be equal at all altitudes as prescribed by design regulations.

## 31. What is the difference in time when the sun moves 20° of longitude?

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- a) 1:00 h
- b) 1:20 h
- c) 0:20 h
- d) 0:40 h

## 32. QFE is the...

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- a) Magnetic bearing to a station
- b) Barometric pressure at a reference datum, typically the runway threshold of an airfield.
- c) Barometric pressure adjusted to sea level, using the international standard atmosphere (ISA).
- d) Altitude above the reference pressure level 1013.25 hPa.

## 33. A pilot license issued in accordance with ICAO Annex 1 is valid in...

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- a) The country where the license was acquired.
- b) All ICAO countries.
- c) The country where the license was issued.
- d) Those countries that have accepted this license on application.



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## 34. Which statement is correct with regard to the short-term memory?

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- 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

## 35. What is the purpose of the sounding pipe valve?

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- a) It allows pressure equalization during cruise at high altitude
- b) To indicate the volumetric filling limit.
- c) It prevents air from entering the burner system
- d) For venting the liquid gas container bottle.

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

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

## 37. How often shall a blind transmission be made?

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- a) Four times
- b) Two times
- c) Three times
- d) One time

## 38. Which are the official basic units for horizontal distances used in aeronautical navigation and their abbreviations?

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- a) Feet (ft), inches (in)
- b) Yards (yd), meters (m)
- c) Nautical miles (NM), kilometers (km)
- d) Land miles (SM), sea miles (NM)

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**39. In a METAR, "(moderate) showers of rain" are designated by the identifier...**

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- a) -+TSRA.
- b) TS
- c) SHRA.
- d) .+RA.

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

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

**41. If there is any doubt about ambiguity, a time of 1620 is to be transmitted as...**

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- a) One six two zero.
- b) Sixteen twenty
- c) One thousand six hundred two zero.
- d) Two zero.

**42. How does a gas react when released from a pressurized container?**

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

**43. What condition may prevent the formation of "radiation fog"?**

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- a) Overcast cloud cover
- b) Clear night, no clouds
- c) Low spread
- d) Calm wind

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**44. 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.

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

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

**46. With regard to global circulation within the atmosphere, where does polar cold air meets subtropical warm air?**

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- a) At the subtropical high pressure belt
- b) At the equator
- c) At the polar front
- d) At the geographic poles

**47. What wind is reportet as 225/15 ?**

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- a) North-east wind with 15 km/h
- b) South-west wind with 15 km/h
- c) South-west wind with 15 kt
- d) North-east wind with 15 kt

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

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

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## 49. 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

## 50. (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

## 51. How can you obtain meteorological information concerning airports during a crosscountry flight?

- a) AIRMET
- b) VOLMET
- c) METAR
- d) GAMET

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

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

**53. How do volume, density and temperature change when a gas is being compressed?**

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- a) Volume decreases, density decreases, temperature decreases.
- b) Volume decreases, density increases, temperature increases.
- c) Volume decreases, density increases, temperature increases
- d) Volume increases, density decreases, temperature decreases.

**54. What phrase is used by a pilot if a transmission is to be answered with "no"?**

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- a) Finish
- b) Negative
- c) No
- d) Not

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

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

**56. In a METAR, "heavy rain" is designated by the identifier...**

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- a) RA
- b) .+SHRA.
- c) .+RA
- d) SHRA.

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

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

**58. The main blast valve is located where?**

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- a) At the main cylinder
- b) At the burner
- c) At the hull equator
- d) At the upper hull part

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

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

**60. The "spread" is defined as...**

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- a) Difference between dew point and condensation point
- b) Relation of actual to maximum possible humidity of air.
- c) Difference between actual temperature and dew point.
- d) Maximum amount of water vapour that can be contained in air.

**61. Which approximate, geometrical form describes the shape of the Earth best for navigation systems?**

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- a) Sphere of ecliptical shape
- b) Ellipsoid
- c) Flat plate
- d) Perfect sphere

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**62. With Central European Summer Time (CEST) given as UTC+2, what UTC time corresponds to 1600 CEST?**

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- a) 1700 UTC.
- b) 1600 UTC
- c) 1500 UTC.
- d) 1400 UTC.

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

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

**64. Which transponder code has to be set unrequested during an emergency?**

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

**65. In what situation is it appropriate to set the transponder code 7600?**

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- a) Hijacking
- b) Loss of radio
- c) Flight into clouds
- d) Emergency

**66. What factor may affect the top of cumulus clouds?**

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- a) The spread
- b) Relative humidity
- c) The absolute humidity
- d) The presence of an inversion layer

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**67. 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?**

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

**68. Which force causes "wind"?**

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- a) Thermal force
- b) Pressure gradient force
- c) Coriolis force
- d) Centrifugal force

**69. What should be considered regarding a scheduled flight over water, when land cannot be reached in case of an emergency landing?**

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- a) Contact to the nearest ATC shall consist during the whole flight
- b) The flight plan has to contain the exact waypoints
- c) For all passengers there must be life jackets or lifeboats present
- d) Transponder code 7600 has to be set during the whole flight

**70. The measurement of altitude is based on the change of the...**

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



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## Response Scheme

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

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