

# Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Human Performance and limitations



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STUDENT NAME:

DATE AND TIME:

**01. A vertical speed indicator connected to a too big equalizing tank results in...**

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

**02. 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.

**03. What is the minimum flight visibility in airspace "C" for an aircraft operating under VFR at FL125?**

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

**04. The dry adiabatic lapse rate has a value of...**

- a) 1,0° C / 100 m.
- b) 0,6° C / 100 m.
- c) 0,65° C / 100 m.
- d) 2° / 1000 ft.

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## 05. In which situations should a pilot use blind transmissions?

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- a) When a transmission containing important navigational or technical information is to be sent to several stations at the same time
- b) When a pilot has flown into cloud or fog unintentionally and therefore would like to request navigational assistance from a ground unit
- c) When no radio communication can be established with the appropriate aeronautical station, but when evidence exists that transmissions are received at that ground unit
- d) When the traffic situation at an airport allows the transmission of information which does not need to be acknowledged by the ground station

## 06. In what case is the pilot allowed to abbreviate the call sign of his aircraft?

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- a) After the ground station has used the abbreviation
- b) Within controlled airspace
- c) If there is little traffic in the traffic circuit
- d) After passing the first reporting point

## 07. What impact may rain have on operation of a hot-air balloon?

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- a) Total mass and gas consumption increase
- b) Rain drops hitting on the hull reduce the lift force.
- c) The hull is deformed, which reduces lift.
- d) The hull is cooled, resulting in less gas consumption.

## 08. 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

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

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

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## 10. What pressure pattern may result from cold-air inflow in high tropospheric layers?

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- a) Formation of a low in the upper troposphere
- b) Formation of a large ground low
- c) Alternating pressure
- d) Formation of a high in the upper troposphere

## 11. 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

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

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

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

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

## 14. Who provides search and rescue service?

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- a) Only military organisations
- b) Both military and civil organisations
- c) Only civil organisations
- d) Only civil organisations

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**15. What is indicated by a red line on the hull thermometer with an analog scale?**

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- a) The minimum permissible value
- b) The take-off temperature
- c) The maximum permissible value
- d) The recommended operating value

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

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

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

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

**18. About the lower end of the pull rope of a hot-air balloon it can be said:**

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- a) It has an especially smooth surface.
- b) It is fixed to the lower basket area
- c) It has to be lubricated before every take-off
- d) It is particularly heat resistant.

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

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

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## 20. What is the meaning of the abbreviation "VMC"?

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

## 21. The average decrease of blood alcohol level for an adult in one hour is approximately...

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- a) 0.3 percent.
- b) 0.03 percent.
- c) 0.01 percent
- d) 0.1 percent.

## 22. 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)

## 23. What is the correct way of acknowledging the instruction "Squawk 4321, Call Bremen Radar on 131.325"?

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- a) Roger
- b) Squawk 4321, wilco
- c) Squawk 4321, 131.325
- d) Wilco

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

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

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

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- 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

## 26. The pressure at MSL in ISA conditions is...

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

## 27. The term ,magnetic course' (MC) is defined as...

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

## 28. The "swiss cheese model" can be used to explain the...

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- a) Optimal problem solution
- b) State of readiness of a pilot
- c) Procedure for an emergency landing
- d) Error chain.

## 29. Which of the following symptoms may indicate hypoxia?

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- a) Blue marks all over the body
- b) Blue discolouration of lips and fingernails
- c) Muscle cramps in the upper body area
- d) Joint pain in knees and feet

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**30. While overflying a waypoint, it is stated that a distance of 2 NM has been taken 10 min. What will be the expected time of endurance for the complete distance of 18 NM?**

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

**31. Which of the following statements is correct?**

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- a) The density of hull air is lower with decreasing environmental pressure
- b) The density of hull air is higher with increasing environmental pressure
- c) The density of hull air is lower than environmental air only if the hull temperature is lower than environmental temperature
- d) The density of hull air is lower than environmental air only if the hull temperature is higher than environmental temperature

**32. The standard state of gases refers to which temperature?**

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

**33. 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?**

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

**34. What has to be considered before touchdown of a hot-air balloon during landing?**

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- a) Inform the followers.
- b) Note the time.
- c) Cut off gas feed to the ignition flames.
- d) Turn off the radio.

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**35. Which characteristic is important when choosing sunglasses used by pilots?**

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- a) Curved sidepiece
- b) Unbreakable
- c) No UV filter
- d) Non-polarised

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**36. 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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**37. The altimeter's reference scale is set to airfield pressure (QFE). What indication is shown during the flight?**

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- a) Pressure altitude
- b) Altitude above MSL
- c) Airfield elevation
- d) Height above airfield

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**38. What must be considered for cross-border flights?**

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- a) Transmission of hazard reports
- b) Approved exceptions
- c) Regular location messages
- d) Requires flight plans

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**39. What weather is likely to be experienced during "Foehn" in the Bavarian area close to the alps?**

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- a) High pressure area overhead Biskaya and low pressure area in Eastern Europe
- b) Nimbostratus cloud in the southern alps, rotor clouds at the lee side, warm and dry wind
- c) Cold, humid downhill wind on the lee side of the alps, flat pressure pattern
- d) Nimbostratus cloud in the northern alps, rotor clouds at the windward side, warm and dry wind



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## 40. UTC is...

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- 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.

## 41. Assume two arbitrary points A and B on the same parallel of latitude, but not on the equator. Point A is located on 010°E and point B on 020°E. The rumb line distance between A and B is always...

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- a) More than 300 NM.
- b) Less than 300 NM.
- c) Less than 600 NM.
- d) More than 600 NM

## 42. A vertical speed indicator measures the difference between...

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

## 43. 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?

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- 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.

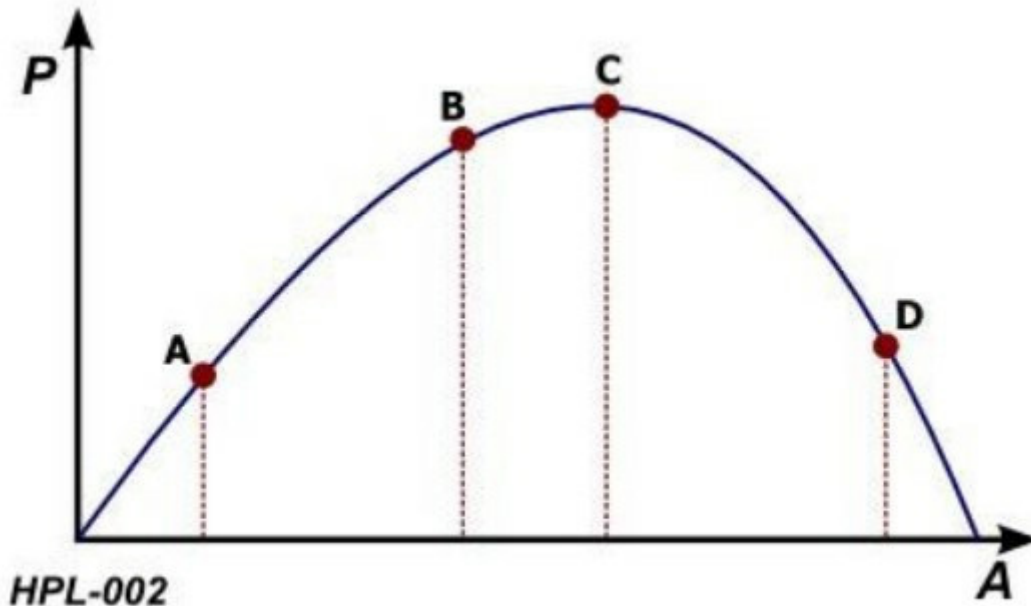
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44. The ideal level of arousal is at which point in the diagram? See figure (HPL- 002) P = Performance A = Arousal / Stress Siehe Anlage 1



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

45. 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

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

- 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 airspaces
- d) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods

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## 47. How may passengers assist the balloon pilot during landing preparation?

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- a) By activating the emergency opening
- b) By activating the vents
- c) By stowing of loose parts
- d) By activating the pull rope

## 48. The hull fabric of a hot-air balloon undergoes the most continuous thermal stress in which area?

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- a) In the apron area.
- b) In the lower third.
- c) At the equator.
- d) At the top area.

## 49. Wake turbulence is caused by...

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- a) Wind shear at the wingtip of an aerofoil.
- b) Pressure compensation at the wingtip of an aerofoil.
- c) Jet blast behind a turbine engine
- d) Turbulence at the downwind side of a mountain range.

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

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

## 51. What wind conditions should be expected in the vicinity of showers or thunderstorms?

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- a) Steady wind from direction of shower.
- b) Steady wind into direction of shower.
- c) Strong gust from variable directions
- d) Calm winds during passage of a shower.

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

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

**53. Damages to the hot-air balloon hull fabric are most critical in which area?**

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- a) In the lower third.
- b) At the top area
- c) At the equator
- d) In the apron area.

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

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

**55. 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

**56. 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

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**57. What are the air masses that Central Europe is mainly influenced by?**

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- a) Equatorial and tropical warm air
- b) Polar cold air and tropical warm air
- c) Tropical and arctic cold air
- d) Arctic and polar cold air

**58. From which altitude on does the body usually react to the decreasing atmospheric pressure?**

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- a) 7000 feet
- b) 12000 feet
- c) 2000 feet
- d) 10000 feet

**59. On what frequency shall a blind transmission be made?**

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- 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

**60. How do dew point and relative humidity change with decreasing temperature?**

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- a) Dew point increases, relative humidity decreases
- b) Dew point remains constant, relative humidity decreases
- c) Dew point remains constant, relative humidity increases
- d) Dew point decreases, relative humidity increases

**61. 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?**

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- 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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**62. 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 workaround procedure
- d) Risky flight maneuvers to impress spectators on ground

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**63. 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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**64. Which of the following options states a correct position report?**

- a) DEABC over "N" in FL 2500 ft
- b) DEABC over "N" at 35
- c) DEABC, "N", 2500 ft
- d) DEABC reaching "N"

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**65. Times are transmitted as...**

- a) Standard time.
- b) Time zone time.
- c) Local time.
- d) UTC.

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**66. A cross-country flight is made using the ICAO 1 : 500.000 aeronautical chart. An overflight crosscheck shows that a distance of 4 cm in the chart has been passed within 12 minutes. After how many more minutes, the overflight of another waypoint at a chart distance of additional 6 cm can be expected?**

- a) 9 min
- b) 6 min.
- c) 12 min
- d) 18 min.

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**67. What is the great circle distance between two points A and B on the equator when the difference between the two associated meridians is exactly one degree of longitude?**

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- a) 60 NM
- b) 216 NM
- c) 400 NM
- d) 120 NM

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

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

**69. Why should liquid gas bottles for hot-air balloons be transported upright?**

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- a) Because no other positions are approved.
- b) To prevent damage on the riser tube.
- c) To prevent exiting of residual gas.
- d) To keep the armature panel clean.

**70. What kind of information should be included in an urgency message?**

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- 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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## Response Scheme

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

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