

# Exam simulation

BPL Hot Air - Balloon Pilot License - Operational Procedures



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STUDENT NAME:

DATE AND TIME:

## 01. 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

## 02. What has to be considered at moderate wind speeds during a balloon ride across mountainous area with cloud-free sky?

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- a) Decreasing burner power
- b) Altimeter indication too low
- c) Icing conditions
- d) Lee waves and severe up- and downdrafts

## 03. A flight level is a...

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

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

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

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**05. The directional information "12 o'clock" is correctly transmitted as...**

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- a) Twelve o'clock
- b) One two
- c) One two hundred
- d) One two o'clock

**06. A cross-country flight is made using the ICAO 1 : 500.000 aeronautical chart. An overflight crosscheck shows that a distance of 6 cm in the chart has been passed within 9 minutes. After how many more minutes, the overflight of another waypoint at a chart distance of additional 4 cm can be expected?**

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

**07. 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

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

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

**09. 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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## **10. 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

## **11. The shortest distance between two points on Earth is represented by a part of...**

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

## **12. The movement of air flowing apart is called...**

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- a) Divergence
- b) Concordance
- c) Convergence
- d) Subsidence

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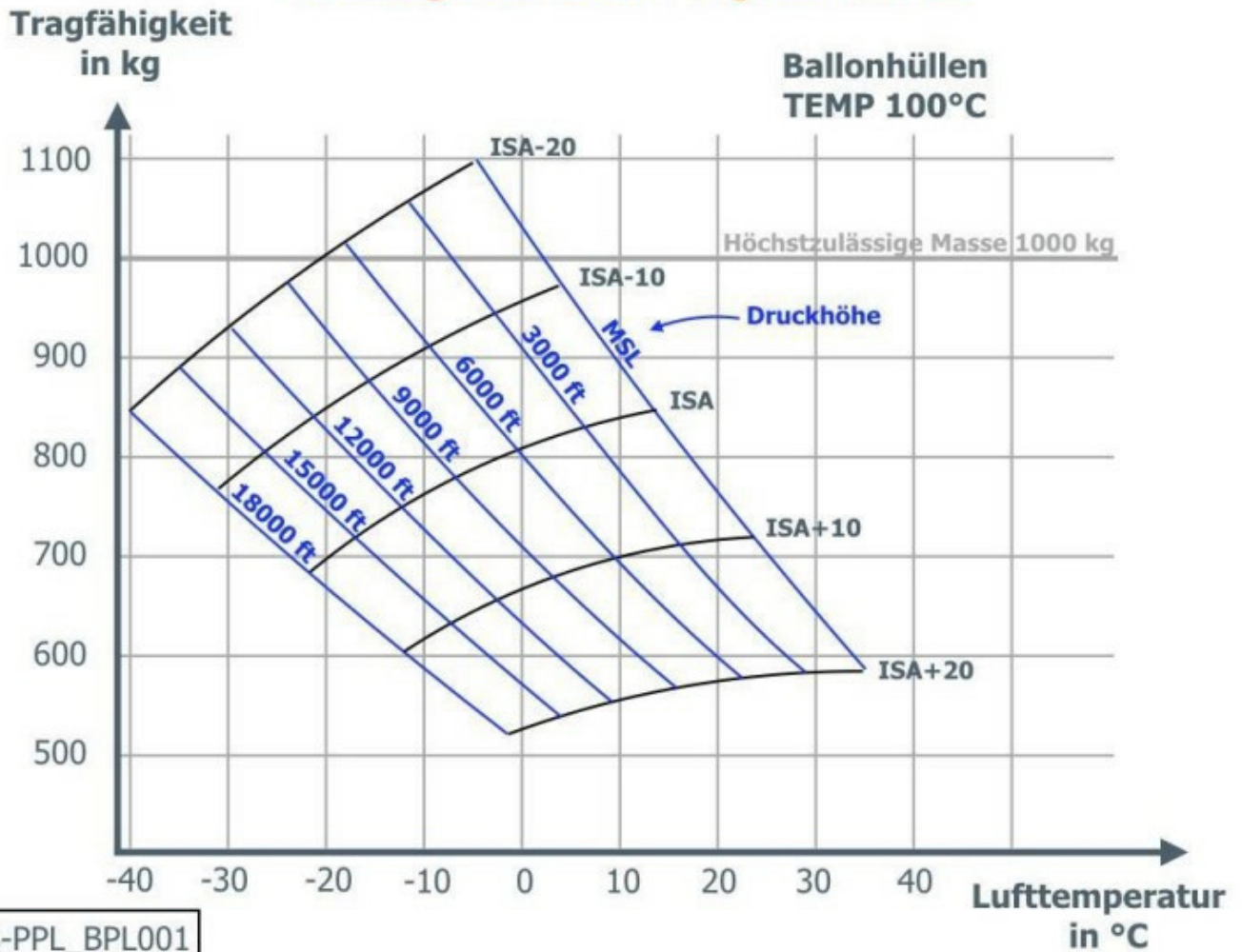
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13. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming temperature ISA+10, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 12000 ft ? (use attachment ECQB-PPL\_BPL001)

## Auszug aus dem Flughandbuch



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

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## 14. Which of the following messages has the highest priority?

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- a) Turn left
- b) Request QDM
- c) QNH 1013
- d) Wind 300 degrees, 5 knots

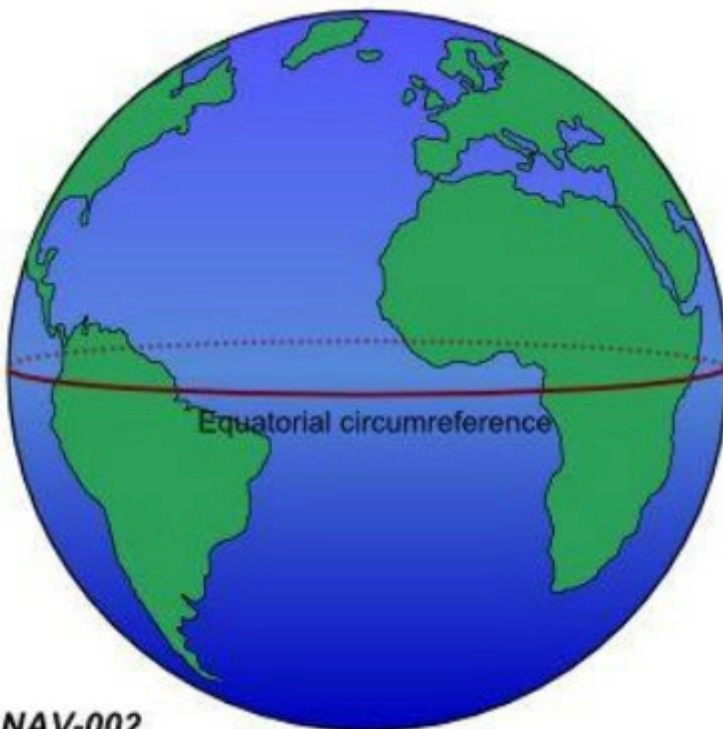
## 15. What process causes latent heat being released into the upper troposphere?

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- a) Descending air across widespread areas
- b) Cloud forming due to condensation
- c) Evaporation over widespread water areas
- d) Stabilisation of inflowing air masses

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

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

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## 17. Which wind system may be dangerous for balloon rides in the Alps?

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

## 18. When using a GPS for tracking to the next waypoint, a deviation indication is shown by a vertical bar and dots to the left and to the right of the bar. What statement describes the correct interpretation of the display?

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- a) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection is  $\pm 10$  NM
- b) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection depends on the operating mode of the GPS
- c) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection is  $\pm 10^\circ$
- d) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection depends on the operating mode of the GPS

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

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

## 20. What is the correct term for a message used for air traffic control?

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- a) Flight safety message
- b) Flight regularity message
- c) Message related to direction finding
- d) Meteorological message

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## 21. Which transponder code has to be set unrequested during an emergency?

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

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

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- 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

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

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- 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

## 24. The rotational axis of the Earth runs through the...

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- a) Geographic North Pole and on the geographic South Pole
- b) Magnetic north pole and on the magnetic south pole
- c) Geographic North Pole and on the magnetic south pole
- d) Magnetic north pole and on the geographic South Pole

## 25. 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?

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- 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

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**26. What amount of ignitable mixture can be made from 1 L (0.001 m<sup>3</sup>) liquid propane gas?**

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- a) 0.38 m<sup>3</sup>
- b) 0.26 m<sup>3</sup>
- c) 12 m<sup>3</sup>
- d) 1.2 m<sup>3</sup>

**27. 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

**28. According ISA, what is the density of air at MSL?**

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- a) 1.225 g/m<sup>3</sup>
- b) 1225 kg/m<sup>3</sup>
- c) 12.25 kg/m<sup>3</sup>
- d) 1.225 kg/m<sup>3</sup>

**29. 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

**30. Where are the two polar circles?**

---

- a) 23.5° north and south of the poles
- b) 23.5° north and south of the equator
- c) At a latitude of 20.5°S and 20.5°N
- d) 20.5° south of the poles

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## 31. In a METAR, "heavy rain" is designated by the identifier...

---

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

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

---

- a) VAR: 004° E. DEV: -002°
- b) VAR: 004° W. DEV: +002°
- c) VAR: 004° E. DEV: +002°
- d) VAR: 004° W. DEV: -002°

## 33. A wind shear is...

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- a) A meteorological downslope wind phenomenon in the Alps
- b) A wind speed change of more than 15 kt
- c) A vertical or horizontal change of wind speed and wind direction
- d) A slow increase of the wind speed in altitudes above 13000 ft

## 34. What weather conditions may be expected during conditionally unstable conditions?

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- a) Towering cumulus, isolated showers of rain or thunderstorms
- b) Layered clouds up to high levels, prolonged rain or snow
- c) Shallow cumulus clouds with base at medium levels
- d) Sky clear of clouds, sunshine, low winds

## 35. The character of an air mass is given by what properties?

---

- a) Wind speed and tropopause height
- b) Environmental lapse rate at origin
- c) Temperatures at origin and present region
- d) Region of origin and track during movement

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**36. 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

**37. 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)**

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

**38. What is the percentage of oxygen in the atmosphere at 6000 ft?**

---

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

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

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

**40. 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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## 41. The majority of aviation accidents are caused by...

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

## 42. With regard to gases, which statement is correct?

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- a) Temperature increases with increasing volume and decreasing pressure
- b) Volume increases with increasing temperature and constant pressure
- c) Temperature decreases with increasing pressure and constant volume
- d) Pressure decreases with increasing temperature and constant volume

## 43. What information is broadcasted on a VOLMET frequency?

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- a) Meteorological information
- b) NOTAMS
- c) Navigational information
- d) Current information

## 44. A risk factor for decompression sickness is...

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

## 45. Which instrument can be affected by the hysteresis error?

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- a) Altimeter
- b) Tachometer
- c) Direct reading compass
- d) Vertical speed indicator

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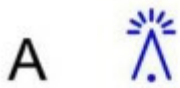
**46. In case of radio communication failure within a CTR (control zone), the pilot has to ...**

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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

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

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PFP-061

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

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

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

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

---

- 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

## 50. What is the percentage of nitrogen in the atmosphere?

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

## 51. What is the meaning of the abbreviation "AIREP"?

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

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

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

## 53. 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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**54. 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

**55. 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

**56. 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

**57. Which dangerous attitudes are often combined?**

---

- a) Impulsivity and carefulness
- b) Macho and invulnerability
- c) Self-abandonment and macho
- d) Invulnerability and self-abandonment

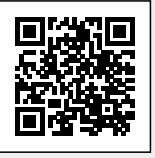
**58. What is the correct phrase to begin a blind transmission?**

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- a) Transmitting blind
- b) No reception
- c) Listen
- d) Blind

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**59. 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

**60. A pilot burner which is fed by the gas phase, works by which principle?**

---

- a) Electrostatic principle
- b) Bunsen principle
- c) Aerostatic principle
- d) Aerodynamic principle

**61. At what rate does the temperature change with increasing height according to ISA (ICAO Standard Atmosphere) within the troposphere?**

---

- a) Increases by 2° C / 1000 ft
- b) Decreases by 2° C / 100 m
- c) Decreases by 2° C / 1000 ft
- d) Increases by 2° C / 100 m

**62. What may be the consequence, if gas containers of a hot-air balloon are refilled at temperatures below 0 °C by volume (80%)?**

---

- a) Too low pressure at high temperatures
- b) Less burner power at high temperatures
- c) Smaller volume in the container at high temperatures
- d) Overfilling of the gas container

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

---

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

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## 64. Why should liquid gas bottles for hot-air balloons be transported upright?

---

- 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

## 65. Regarding the type of cloud, precipitation is classified as...

---

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

## 66. 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)

## 67. What does the abbreviation "HX" stand for?

---

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

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

---

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

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## 69. 1000 ft equal...

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

## 70. What is the purpose of the signal square at an aerodrome?

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- 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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## Response Scheme

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

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

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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: _____		