

# Exam simulation

Quiz BPL Gas - Balloon Pilot License - Human Performance and limitations



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STUDENT NAME:

DATE AND TIME:

**01. What weather phenomenon designated by "2" has to be expected on the lee side during "Foehn" conditions?  
See figure (MET-001). Siehe Anlage 1**



- a) Cumulonimbus
- b) Altocumulus Castellanus
- c) Nimbostratus
- d) Altocumulus lenticularis

**02. What does a readability of 1 indicate?**

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

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

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## 04. Mountain side updrafts can be intensified by ...

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- 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

## 05. 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)

## 06. Before take-off, the balloon pilot realises that the maximum take-off mass has been exceeded by 5%. What has to be done?

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- a) The load has to be reduced to maximum take-off mass.
- b) During take-off, special care has to be taken for obstacles.
- c) With exceeding up to 5%, normal take-off can be performed.
- d) Take-off has to be approved by the airfield manager on duty.

## 07. The Empty Mass of a gas balloon includes:

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- 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.

## 08. The minimum flight visibility at 5000 ft MSL in airspace B for VFR flights is...

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

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**09. 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

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**10. Lower-than-standard temperature may lead to...**

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

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

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

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

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

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**13. Which phrase is used by a pilot when he wants to fly through controlled airspace?**

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- a) Apply
- b) Want
- c) Request
- d) Would like

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## 14. When do you expect wind shear?

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- a) During an inversion
- b) During a summer day with calm winds
- c) In calm wind in cold weather
- d) When passing a warm front

## 15. Which of the following factors affects the reception of VHF transmissions?

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- a) Altitude
- b) Twilight error
- c) Shoreline effect
- d) Height of ionosphere

## 16. A true altitude is...

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- a) A height above ground level corrected for non-standard pressure
- b) An altitude above mean sea level corrected for non-standard temperature.
- c) A height above ground level corrected for non-standard temperature.
- d) A pressure altitude corrected for non-standard temperature.

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

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- 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 %

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

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

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

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

## 20. Regarding the communication model, how can the use of the same code during radio communication be ensured?

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- a) By the use of proper headsets
- b) By a particular frequency allocation
- c) By the use of radio phraseology
- d) By using radios certified for aviation use only

## 21. In case of damage of the hull of a gas balloon, repairs have to be done by a certified Approved Aeronautical Workshop when exceeding a length of:

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- a) 1.0 m
- b) 2.0 m
- c) 0.5 m
- d) 5.0 m

## 22. The purpose of the drag lines of the parachute is ...

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- a) To transfer the carrying force of the balloon in the top opening area
- b) To transfer the force from the pull rope to the parachute.
- c) To keep the parachute in the center of the top opening.
- d) To transfer the force from the pull rope to the free-balloon hull.

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

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

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## 24. 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

## 25. 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) 1, 2 and 3
- b) 2 and 3
- c) 1 and 3
- d) 1 and 2

## 26. What is the meaning of the abbreviation "TRA"?

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

## 27. During a flight in an air mass with a temperature equal to ISA and the QNH set correctly, the indicated altitude is...

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

## 28. Which of the following options states the working principle of a vertical speed indicator?

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- a) Measuring the present static air pressure and comparing it to the static air pressure inside a reservoir
- b) Static air pressure is measured and compared against a vacuum
- c) Measuring the vertical acceleration through the displacement of a gimbal-mounted mass
- d) Total air pressure is measured and compared to static pressure

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## 29. 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

## 30. Which area could be crossed with certain restrictions?

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- a) Restricted area
- b) No-fly zone
- c) Prohibited area
- d) Dangerous area

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

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

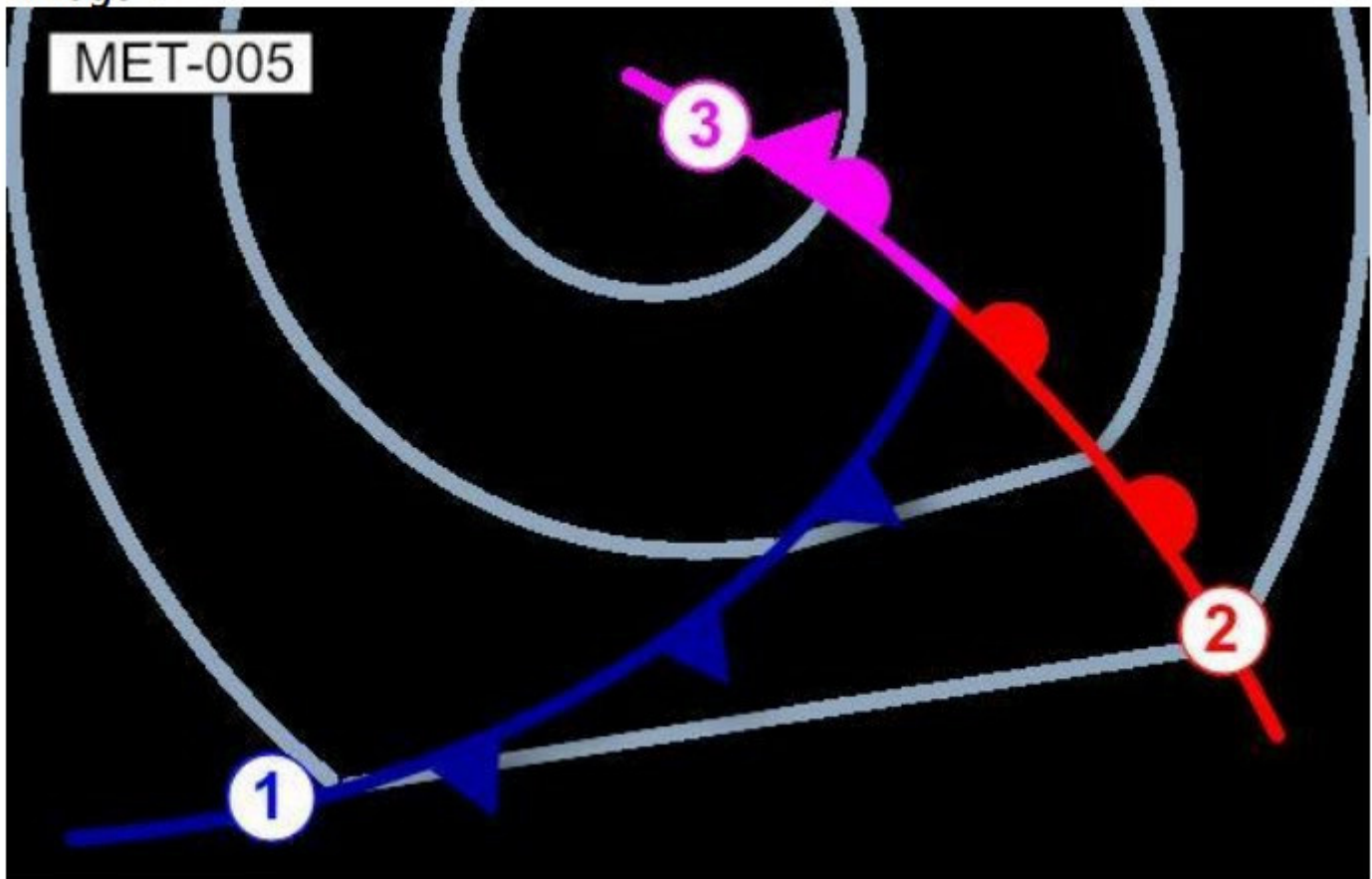
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32. The symbol labeled (2) as shown in the picture is a / an... See figure (MET-005) Siehe Anlage 4



- a) Front aloft
- b) Cold front.
- c) Occlusion.
- d) Warm front.

33. 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 %



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**34. What change results from an increase in temperature of the carrying gas and of the environmental air at a gas balloon at maximum differential pressure?**

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- a) The load capability decreases by 4% per K temperature change.
- b) The load capability increases by 4% per K temperature change.
- c) The load capability increases by 0,4% per K temperature change.
- d) The load capability decreases by 0,4% per K temperature change.

**35. 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

**36. A wind shear is...**

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

**37. 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.

**38. The maximum number of passengers can be found ...**

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- a) In the certificate of registration.
- b) In the operating handbook.
- c) In the Flight Log book
- d) In the airworthiness certificate.

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**39. 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.

**40. Under which circumstances is it more likely to accept higher risks?**

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- 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

**41. 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.

**42. In what different ways can a risk be handled appropriately?**

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- a) Avoid, ignore, palliate, reduce
- b) Extrude, avoid, palliate, transfer
- c) Ignore, accept, transfer, extrude
- d) Avoid, reduce, transfer, accept

**43. 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.

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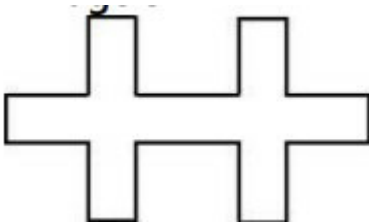
**44. Which of the following options are possible SSR-Transponder modes?**

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- a) B, R, S
- b) A, C, S
- c) A, C, R
- d) B, C, V

**45. What is the meaning of this sign at an aerodrome? See figure (ALW-011) Siehe Anlage 1**

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- a) Landing prohibited for a longer period
- b) Glider flying is in progress
- c) After take-off and before landing all turns have to be made to the right
- d) Caution, manoeuvring area is poor

**46. The ongoing process to monitor the current flight situation is called...**

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- a) Anticipatory check procedure.
- b) Situational thinking.
- c) Constant flight check.
- d) Situational awareness.

**47. 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

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**48. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are the TH and the DEV? (2,00 P.)**

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

**49. The assembly of the panels to the hull of a web-less gas balloon is done ...**

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- a) By vulcanisation.
- b) By stitching.
- c) By welding
- d) By glueing.

**50. 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) Four times the previous value.
- c) Half the previous value.
- d) A quarter of the previous value.

**51. The barometric altimeter with QNH setting indicates...**

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- 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.

**52. 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

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**53. Carbon monoxide poisoning can be caused by...**

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

**54. The distance between two airports is 220 NM. On an aeronautical navigation chart the pilot measures 40.7 cm for this distance. The chart scale is...**

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- a) 1 : 2000000.
- b) 1 : 1000000.
- c) 1 : 500000.
- d) 1 : 250000.

**55. 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

**56. During a flight, a flight plan can be filed at the...**

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- a) Search and Rescue Service (SAR).
- b) Next airport operator en-route.
- c) Flight Information Service (FIS).
- d) Flight Information Service (FIS).

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

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

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

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

**59. What is the correct designation of the frequency band from 118.000 to 136.975 MHz used for voice communication?**

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- a) VHF
- b) MF
- c) MF
- d) HF

**60. Distress messages are messages...**

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

**61. A flight is called a "visual flight", if the...**

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- a) Flight is conducted in visual meteorological conditions.
- b) Visibility in flight is more than 8 km
- c) Flight is conducted under visual flight rules.
- d) Visibility in flight is more than 5 km.

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

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

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**63. 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?**

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- 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.

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64. Given the following masses: Empty mass 240 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg U which pressure altitude can the balloon climb with 5 persons and 4 gas containers in the basket, assuming temperatures below ISA? (use attachment ECQB-PPL\_BPL001) Siehe Anlage 1

## Auszug aus dem Flughandbuch



- a) 3000 ft
- b) 17000 ft
- c) 13000 ft
- d) 7000 ft



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**65. Under which conditions, no hazards should be expected for a balloon ride?**

---

- a) With high pressure areas before sunset
- b) With an warm front approaching
- c) With an cold front approaching
- d) Close to showers or thunderstorms

**66. 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

**67. 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.

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

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

**69. What is the correct way of using the aircraft call sign at first contact?**

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- a) Using the last two characters only
- b) Using all characters
- c) Using the first two characters only
- d) Using the first three characters only

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## 70. Which dangerous attitudes are often combined?

---

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

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## Response Scheme

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

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