

Exam simulation

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



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STUDENT NAME:

DATE AND TIME:

01. What is the meaning of a steady green light signal at a controlled aerodrome directed to an aircraft in flight?

- a) Airport unsafe, do not land
- b) Return for landing, followed by steady green at the appropriate time
- c) Cleared to land
- d) Give way to other aircraft and continue circling

02. Which of the following statements is correct?

- 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.

03. What does a readability of 3 indicate?

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

04. The aerostatic lift corresponds to which force?

- a) The weight of the balloon less ballast
- b) The dynamic force due to airstream across the top of the hull
- c) The weight of the displaced air
- d) The drag due to airstream around the balloon envelope

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05. 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?

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

06. The measurement of altitude is based on the change of the...

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

07. UTC is...

- 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.

08. What is the call sign of the surface movement control?

- a) Earth
- b) Ground
- c) Tower
- d) Control

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

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

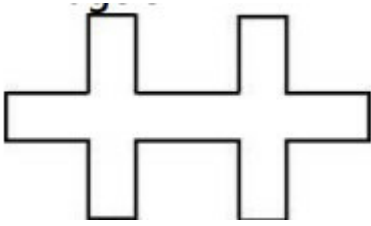
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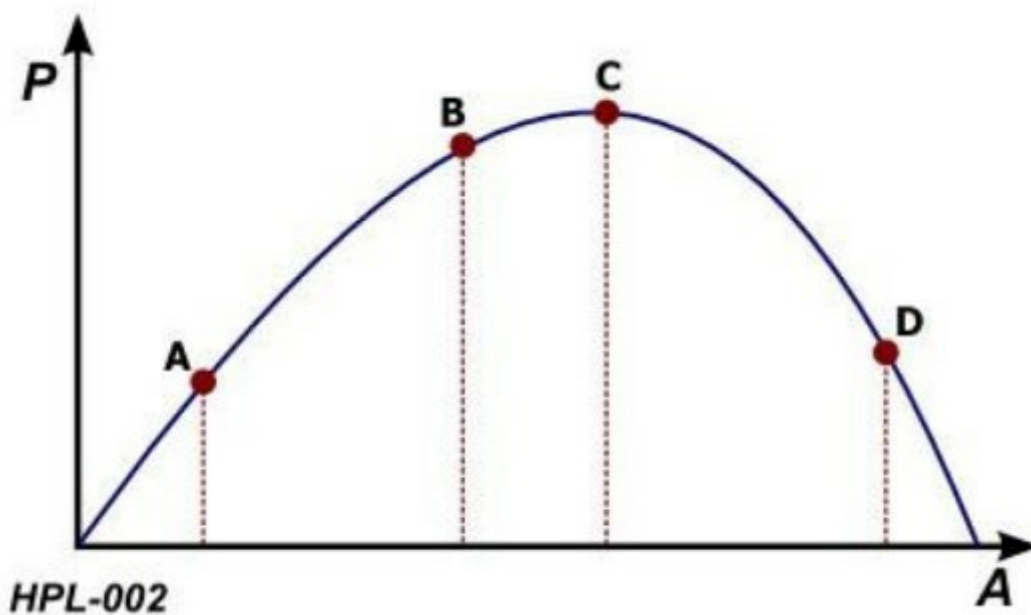
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10. What is the meaning of this sign at an aerodrome? See figure (ALW-011) Siehe Anlage 1



- 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

11. At which point in the diagram will a pilot find himself to be overstrained? See figure (HPL-002) P = Performance A = Arousal / Stress Siehe Anlage 1



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

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12. At which altitude is the atmospheric pressure approximately half the MSL value (1013 hPa)?

- a) 5000 ft
- b) 18000 ft
- c) 22000 ft
- d) 10000 ft

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

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

14. 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 %

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

- 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 FL125?

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

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17. With regard to gases, which statement is correct?

- 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.

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

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

19. A risk factor for decompression sickness is...

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

20. Clouds in high layers are referred to as...

- a) Strato-.
- b) Alto-.
- c) Cirro-.
- d) Nimbo-.

21. What is the meaning of the abbreviation "TRA"?

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

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

- a) Traffic information
- b) Taxi instructions
- c) Heading
- d) Altimeter setting

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

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

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

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

25. The "Certificate of Airworthiness" is issued by the state...

- a) Of the residence of the owner
- b) In which the aircraft is registered.
- c) In which the airworthiness review is done.
- d) In which the aircraft is constructed.

26. Which are the properties of a Lambert conformal chart?

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

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27. What cause may result in a reduction of volume of a free balloon?

- a) Reduction in mass
- b) A gust
- c) Cooling of environment air
- d) Increase in hull temperature

28. What is the gas composition of "air"?

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

29. The standard state of gases refers to which temperature?

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

30. Which stage of a thunderstorm is dominated by updrafts?

- a) Upwind stage
- b) Cumulus stage
- c) Mature stage
- d) Dissipating stage

31. At which conditions does the arm blower have the highest efficiency?

- a) With as small distance to the balloon opening as possible.
- b) By evenly swiveling for better air spreading.
- c) By completely filling the balloon opening with the air beam.
- d) By placing the blower inside the hull.

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

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

33. What is the percentage of nitrogen in the atmosphere?

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

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

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

35. In which situations should a pilot use blind transmissions?

- 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

36. Which air traffic services can be expected within an FIR (flight information region)?

- a) FIS (flight information service) ALR (alerting service)
- b) ATC (air traffic control) FIS (flight information service)
- c) AIS (aeronautical information service) SAR (search and rescue)
- d) ATC (air traffic control) AIS (aeronautical information service)

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37. 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

38. The term "aerodrome elevation" is defined as...

- a) The highest point of the landing area.
- b) The average value of the height of the manoeuvring area.
- c) The highest point of the apron.
- d) The lowest point of the landing area.

39. Who provides search and rescue service?

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

40. A frequency of 119.500 MHz is correctly transmitted as...

- a) One one niner decimal five
- b) One one niner decimal five zero.
- c) One one niner tousand decimal five zero.
- d) One one niner decimal five zero zero.

41. 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?

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

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42. What is the usual direction of movement of a polar front low?

- a) To the northeast during winter, to the southeast during summer
- b) Parallel to the the warm-sector isobars
- c) To the northwest during winter, to the southwest during summer
- d) Parallel to the warm front line to the south

43. 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

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

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

45. What effect has air temperature on the carrying force and on maximum take-off mass of a balloon?

- a) Maximum take-off mass is higher at low temperatures.
- b) Maximum take-off mass is lower at low temperatures.
- c) Carrying force is higher at low temperatures.
- d) Carrying force is lower at low temperatures.

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

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

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47. What conditions are favourable for the formation of thunderstorms?

- a) Warm and dry air, strong inversion layer
- b) Clear night over land, cold air and patches of fog
- c) Calm winds and cold air, overcast cloud cover with St or As
- d) Warm humid air, conditionally unstable environmental lapse rate

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

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

49. Which parts of a hot-air balloon provide protection for the basket during landing?

- a) Wheels
- b) Rubber pads
- c) Wearing strips
- d) Steel runners

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

- 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

51. What conditions are mandatory for the formation of thermal thunderstorms?

- a) Absolutely stable atmosphere, high temperature and high humidity
- b) Absolutely stable atmosphere, high temperature and low humidity
- c) Conditionally unstable atmosphere, high temperature and high humidity
- d) Conditionally unstable atmosphere, low temperature and low humidity

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52. A boundary between a cold polar air mass and a warm subtropical air mass showing no horizontal displacement is called...

- a) Warm front.
- b) Occluded front.
- c) Cold front.
- d) Stationary front.

53. The Empty Mass of a gas balloon includes:

- a) Ballast packages, basket, hull, valve and towing rope.
- b) Basket, burner, ballast packages, hull, net and towing rope.
- c) Basket, basket ring, Valve, net, hull and towing rope.
- d) Burner, ballast packages, instruments, net and towing rope.

54. At equilibrium the inner overpressure of a free balloon is highest at:

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

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

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

56. During buildup of a hot-air balloon, who has to be equipped with tight, flame resistant gloves and clothing covering all body parts?

- a) Only the balloon pilot
- b) Balloon pilot, buildup team and spectators
- c) Only the buildup team
- d) The balloon pilot and the buildup team

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

- 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

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

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

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

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

60. 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?

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

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

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

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62. What has to be expected when diving into an inversion layer from above?

- a) Rate of descent increases
- b) Rate of descent decreases.
- c) Sudden drop onto the ground.
- d) Uncontrollable oscillation of the basket.

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

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

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

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

65. After take-off with a balloon, obstacles at a distance of 300 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?

- a) 8 m/s
- b) 2.5 m/s
- c) 10 m/s
- d) 1 m/s

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

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

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67. 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?

- 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.

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

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

69. (For this question, please use annex PFP-063) According ICAO, what symbol indicates a general spot elevation? Siehe Anlage 7

- A 300
- B (300)
- C • 1737
- D • 1737

PFP-063

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

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70. Heavy downdrafts and strong wind shear close to the ground can be expected...

- a) During approach to an airfield at the coast with a strong sea breeze.
- b) During cold, clear nights with the formation of radiation fog
- c) During warm summer days with high, flatted Cu clouds.
- d) Near the rainfall areas of heavy showers or thunderstorms.

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Response Scheme

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

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