

Exam simulation

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



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STUDENT NAME:

DATE AND TIME:





01. The term "static pressure" is defined as pressure...

- a) Resulting from orderly flow of air particles
- b) Inside the airplane cabin
- c) Sensed by the pitot tube
- d) Of undisturbed airflow

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

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

03. (For this question, please use annex PFP-062) According ICAO, what symbol indicates a civil airport (not international airport) with paved runway?

- A 
- B 
- C 
- D 

PFP-062

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

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04. The aerostatic lift corresponds to which force?

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

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05. 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)

Auszug aus dem Flughandbuch



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

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

- a) 1.225 g/m³
- b) 1225 kg/m³
- c) 1.225 kg/m³
- d) 12.25 kg/m³

07. Which phrase is to be repeated three times before transmitting an urgency message?

- a) Pan Pan
- b) Help
- c) Urgent
- d) Mayday

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

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

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

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

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

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

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11. Moderate to severe turbulence has to be expected...

- a) On the lee side of a mountain range when rotor clouds are present
- b) Below thick cloud layers on the windward side of a mountain range
- c) With the appearance of extended low stratus clouds (high fog)
- d) Overhead unbroken cloud layers

12. At time of take-off, ground wind speed is 2 m/s. Along take-off flight path, at a distance of 320 m obstacles erect up to 30 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) 1.5 m/s
- c) 2 m/s
- d) 0.5 m/s

13. What is the ISA standard pressure at FL 180 (5500 m)?

- a) 500 hPa
- b) 1013.25 hPa
- c) 300 hPa
- d) 250 hPa

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

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

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

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

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16. Wake turbulence is caused by...

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

17. 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

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

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

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

- 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

20. The saturated adiabatic lapse rate is...

- a) Proportional to the dry adiabatic lapse rate
- b) Higher than the dry adiabatic lapse rate
- c) Lower than the dry adiabatic lapse rate
- d) Equal to the dry adiabatic lapse rate

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21. 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

22. Under which conditions "back side weather" ("Rückseitenwetter") can be expected?

- a) During Foehn at the lee side
- b) Before passing of an occlusion
- c) After passing of a warm front
- d) After passing of a cold front

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

- 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

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

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

25. Which is the purpose of the altimeter subscale?

- a) To reference the altimeter reading to a predetermined level such as mean sea level, aerodrome level or pressure level 1013.25 hPa
- b) To adjust the altimeter reading for non-standard temperature
- c) To set the reference level for the altitude decoder of the transponder
- d) To correct the altimeter reading for system errors

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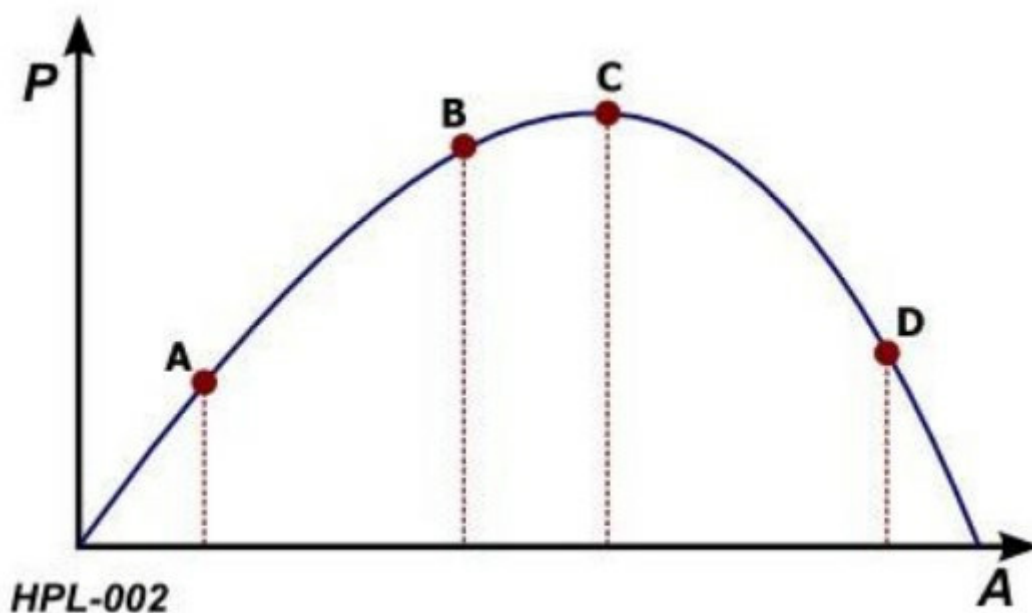


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26. Damages at the basket ropes have to be fixed by:

- a) By the balloon pilot
- b) Upon the next Aeronautical Recurrence Certification
- c) By an Approved Aeronautical Workshop
- d) By tying with a part of a spare rope (during cruise)

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



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

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

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

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

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

30. What is the purpose of the closing rope of a gas balloon?

- a) To close the sand disposer
- b) To close the appendix
- c) To close the emergency opening
- d) To secure the towing rope

31. At which height the load carrying capability of a gas balloon is reduced by approximately 50% compared to MSL?

- a) At 6500 m
- b) At 11000 m
- c) At 18000 m
- d) At 1500 m

32. 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

33. Before buildup, the buildup team has to be informed about correct behaviour at sudden critical situations how?

- a) Only at gusty winds
- b) Twice
- c) At least two days before
- d) By the balloon pilot

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34. Which weather phenomenon is typically associated with wind shear?

- a) Invernal warm front
- b) Thunderstorms
- c) Stable high pressure areas
- d) Fog

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

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

36. What is the correct way to transmit the call sign HB-YKM?

- a) Hotel Bravo Yuliett Kilo Mikro
- b) Home Bravo Yuliett Kilo Mike
- c) Home Bravo Yankee Kilo Mikro
- d) Hotel Bravo Yankee Kilo Mike

37. Distress messages are messages...

- 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

38. Which transponder code indicates a radio failure?

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

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

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

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

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

41. What is meant by the term "terrestrial navigation"?

- a) Orientation by instrument readings during visual flight
- b) Orientation by ground features during visual flight
- c) Orientation by GPS during visual flight
- d) Orientation by ground celestial object during visual flight

42. 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?

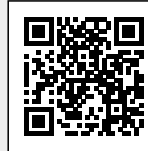
- a) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection is +-10 NM
- b) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection depends on the operating mode 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 +-10°
- 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

43. A heading of 285 degrees is correctly transmitted as...

- a) Two hundred eighty-five
- b) Two eight five
- c) Two eight five hundred
- d) Two hundred eight five

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44. What is a direct consequence of increase of the carrying gas temperature at a gas balloon with maximum differential pressure?

- a) Climb force decreases
- b) Weight force increases
- c) Lift force decreases
- d) Load-bearing capability increases

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

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

46. What factor may affect the top of cumulus clouds?

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

47. What does the abbreviation "FIS" stand for?

- a) Flashing information service
- b) Flight information system
- c) Flashing information system
- d) Flight information service

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

- 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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49. 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

50. Where does the inclination reach its lowest value?

- a) At the geographic equator
- b) At the magnetic poles
- c) At the magnetic equator
- d) At the geographic poles

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

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

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

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

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

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

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54. The purpose of the drag lines of the parachute is ...

- 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

55. Carbon monoxide poisoning can be caused by...

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

56. Below maximum differential pressure of a gas balloon, temperature increase of the carrying gas by 1K results in:

- a) Volume decrease by 0.4%
- b) Volume increase by 0.4%
- c) Volume increase by 4%
- d) Volume decrease by 4%

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

- 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

58. What is the distance between the two parallels of longitude 150°E and 151°E along the equator?

- a) 60 NM
- b) 60 km
- c) 1 NM
- d) 111 NM

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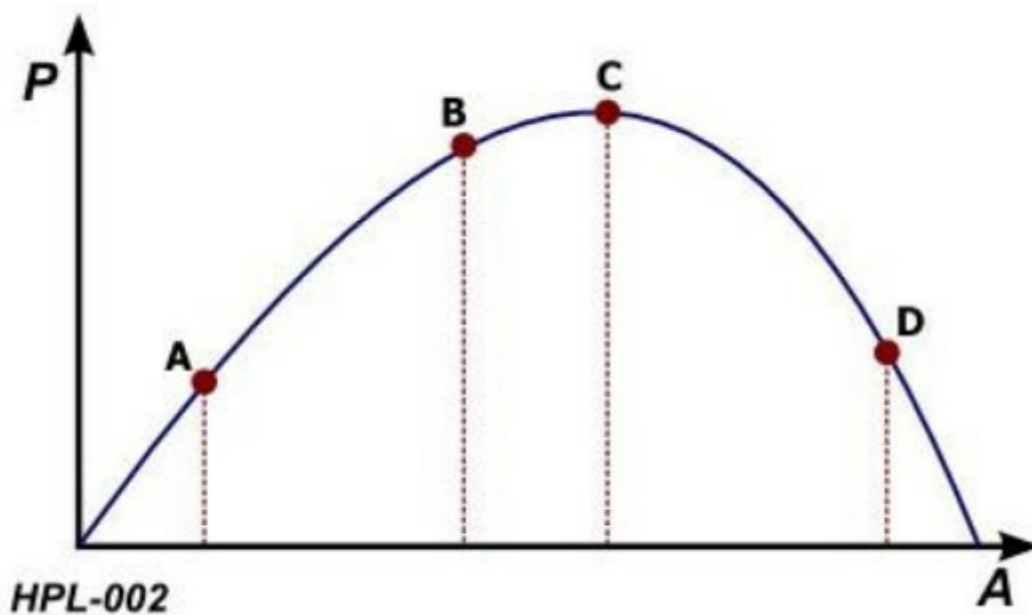
59. What has to be considered before a balloon ride across water surfaces?

- a) A transponder has to be installed and carried aboard
- b) For all people inside the basket life jackets have to be carried aboard
- c) A flight plan with detailed routing has to be filed
- d) Continuous radio communication has to be established with air traffic control

60. 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

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



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

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62. The emergency opening of a gas balloon is located where?

- a) To the side of the appendix
- b) At the upper pole
- c) At the equator
- d) To the side of the valve

63. Environmental air temperature and filling gas temperature are the same. Now, the free balloon descends into warmer air. What statement is correct?

- a) Descent force increases
- b) Descent force decreases
- c) Weight force increases
- d) Weight force decreases

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

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

65. In a given height, a given amount of ballast is unloaded from a gas balloon. How is the increase in height at 5500 m different from the increase in height at MSL by unloading the same amount of ballast?

- a) At 5500 m the increase in height is twice as high
- b) At 5500 m the increase in height is three times as high
- c) At both heights the same increase in height is observed
- d) At 5500 m the increase in height is four times as high

66. What factors are required for the formation of precipitation in clouds?

- a) High humidity and high temperatures
- b) The presence of an inversion layer
- c) Calm winds and intensive sunlight insolation
- d) Moderate to strong updrafts

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67. Where has the ballast aboard a gas balloon to be stored during cruise?

- a) Inside the basket
- b) Below the net ending ropes
- c) At the outside wall of the basket
- d) Inside the tow shield

68. 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

69. A wind shear is...

- 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

70. A true altitude is...

- 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

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Response Scheme

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

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