

Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Principles of Flight (Balloon)



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STUDENT NAME:

DATE AND TIME:

01. 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

02. Which of the following qualities are influenced by stress? 1. Attention 2. Concentration 3. Responsiveness 4. Memory

- a) 2, 4
- b) 1
- c) 1, 2, 3, 4
- d) 1, 2, 3

03. 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

04. 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

05. During a flight in colder-than-ISA air the indicated altitude is...

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

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06. What is meant by "inversion layer"?

- a) An atmospheric layer where temperature increases with increasing height
- b) A boundary area between two other layers within the atmosphere
- c) An atmospheric layer with constant temperature with increasing height
- d) An atmospheric layer where temperature decreases with increasing height

07. With Central European Time (CET) given as UTC+1, what UTC time corresponds to 1700 CET?

- a) 1600 UTC
- b) 1800 UTC
- c) 1500 UTC
- d) 1700 UTC

08. The term 'civil twilight' is defined as...

- a) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the true horizon
- b) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the apparent horizon
- c) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the true horizon
- d) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the apparent horizon

09. The formation of medium to large precipitation particles requires...

- a) An inversion layer
- b) A high cloud base
- c) Strong wind
- d) Strong updrafts

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

- 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

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11. 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

12. What type of fog emerges if humid and almost saturated air, is forced to rise upslope of hills or shallow mountains by the prevailing wind?

- a) Orographic fog
- b) Radiation fog
- c) Steaming fog
- d) Advection fog

13. The term 'True Course' (TC) is defined as...

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

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

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

15. A balloon pilot decides to use one or more separate gas containers for initial heating during buildup. To ensure a safe buildup ...

- 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

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16. The boiling point of propane gas at atmospheric conditions is:

- a) + 5 °C
- b) - 42 °C
- c) - 23 °C
- d) 0 °C

17. 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

18. What is the consequence if the pressure at the burner valve is lower than 0.28 MPa (lower than 2.8 bar)?

- a) Take-off is prohibited
- b) The gas container should be heated by the flame
- c) The heating system may be damaged
- d) The pressure in the gas container may be increased by use of acetylene

19. 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

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

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

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21. The barometric altimeter indicates height above...

- a) Mean sea level
- b) Ground
- c) A selected reference pressure level
- d) Standard pressure 1013.25 hPa

22. While overflying a waypoint, it is stated that a distance of 3 NM has been taken 10 min. What will be the expected time of endurance for the remaining distance of 18 NM?

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

23. Which of the following factors affects the reception of VHF transmissions?

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

24. 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

25. 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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26. 1000 ft equal...

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

27. 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

28. 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

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

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

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30. What clouds and weather can typically be observed during the passage of a cold front?

- a) Strongly developed cumulus clouds (Cb) with showers of rain and thunderstorms, gusting wind followed by cumulus clouds with isolated showers of rain
- b) Wind becoming calm, dissipation of clouds and warming during summer; formation of extended high fog layers during winter
- c) Cirrus, thickening altostratus and altocumulus clouds, lowering cloud base with rain, nimbostratus
- d) In coastal areas during daytime wind from the coast and forming of cumulus clouds, dissipation of clouds during evening and night

31. 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

32. What is the call sign of the aerodrome control?

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

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

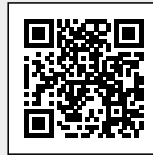
- a) Oxygen transport
- b) Immune defense
- c) Blood sugar regulation
- d) Blood coagulation

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

- 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

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

- 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

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

- 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

38. The term "runway" is defined as a...

- a) Rectangular area on a land or water aerodrome prepared for the landing and take-off of aircraft
- b) Rectangular area on a land aerodrome prepared for the landing and take-off of helicopters
- c) Round area on an aerodrome prepared for the landing and take-off of aircraft
- d) Rectangular area on a land aerodrome prepared for the landing and take-off of aircraft

39. The angle between compass north and magnetic north is called...

- a) Inclination
- b) WCA
- c) Deviation
- d) Variation

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40. Why has a secondary ignition source be available during a ride with a hot-air balloon?

- a) As an emergency lighting during night
- b) To check seals of hose connections during darkness
- c) To provide light signals by a camping fire after an emergency landing
- d) To re-ignite the burner or pilot flames after flameout

41. Which statement is correct with regard to the short-term memory?

- a) It can store 5 (± 2) items for 1 to 2 minutes
- b) It can store 3 (± 1) items for 5 to 10 seconds
- c) It can store 7 (± 2) items for 10 to 20 seconds
- d) It can store 10 (± 5) items for 30 to 60 seconds

42. When air masses meet each other head on, how is this referred to and what air movements will follow?

- a) Divergence resulting in air being lifted
- b) Convergence resulting in air being lifted
- c) Convergence resulting in sinking air
- d) Divergence resulting in sinking air

43. What action has to be taken by the pilot of a hot-air balloon in case of fire on the ground? First action is to ...

- a) Make an emergency call via radio
- b) Leave from the area surrounding the burner
- c) Close the valves of the gas containers
- d) Engage the fire extinguishers

44. 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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45. Which abbreviation is used for the term "abeam"?

- a) ABB
- b) ABA
- c) ABM
- d) ABE

46. 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

47. 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

48. 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

49. An inversion is a layer ...

- a) With increasing pressure with increasing height
- b) With increasing temperature with increasing height
- c) With constant temperature with increasing height
- d) With decreasing temperature with increasing height

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50. What are primary criteria for selecting a landing site? 1. Obstacle situation 2. Elevation of the site 3. Strength of surface wind

- a) 2 and 3
- b) 1, 2 and 3
- c) 1 and 2
- d) 1 and 3

51. What is the correct way to transmit the call sign OE-JVK?

- a) Omega Echo Juliett Victor Kilogramm
- b) Omega Echo Jankee Victor Kilo
- c) Oscar Echo Juliett Victor Kilo
- d) Oscar Echo Jankee Victor Kilogramm

52. The burning gas is pushed from the liquid gas phase through the riser tube to which component?

- a) To the evaporator
- b) To the pressure relief device
- c) To the fill level indicator
- d) To the controller

53. What is the purpose of "interception lines" in visual navigation?

- a) They are used as easily recognizable guidance upon a possible loss of orientation
- b) To visualize the range limitation from the departure aerodrome
- c) They help to continue the flight when flight visibility drops below VFR minima
- d) To mark the next available en-route airport during the flight

54. What is the correct frequency for an initial distress message?

- a) FIS frequency
- b) Radar frequency
- c) Current frequency
- d) Emergency frequency

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55. 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

56. 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

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

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

58. When do you expect wind shear?

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

59. The term 'isogonal' or 'isogonic line' is defined as a line on an aeronautical chart, connecting all points with the same value of...

- a) Variation
- b) Inclination
- c) Heading
- d) Deviation

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60. The shortest distance between two points on Earth is represented by a part of...

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

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

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

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



PFP-062

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

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63. 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

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

- 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

65. The vapour pressure of propane gas in a bottle depends in particular on:

- a) The rigidity of the bottle
- b) The size of the bottle
- c) The temperature
- d) The gas amount

66. What phrase is used by a pilot to inform the tower about a go-around?

- a) Approach canceled
- b) Going around
- c) No landing
- d) Pulling up

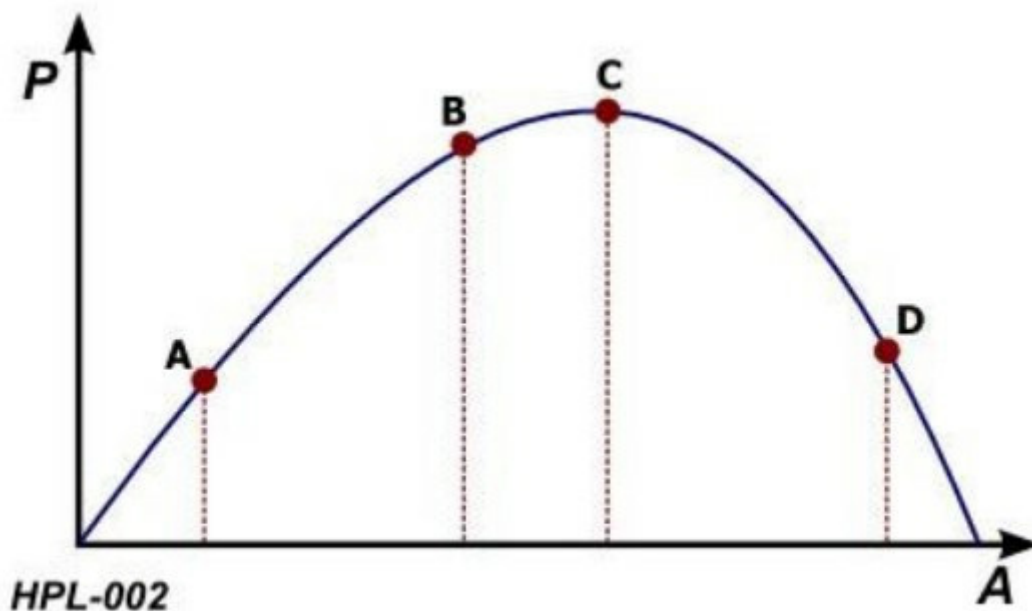
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67. The ideal level of arousal is at which point in the diagram? See figure (HPL-002) P = Performance A = Arousal / Stress



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

68. 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

69. What is referred to as mountain wind?

- a) Wind blowing uphill from the valley during daytime
- b) Wind blowing uphill from the valley during the night
- c) Wind blowing down the mountain side during daytime
- d) Wind blowing down the mountain side during the night

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70. In which situation is it NOT possible to achieve a pressure compensation between the middle ear and the environment?

- a) During a light and slow climb
- b) Breathing takes place using the mouth only
- c) The Eustachian tube is blocked
- d) All windows are completely closed

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Response Scheme

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

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

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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: _____		