Exam simulation

BPL Gas Balloon Pilot Licence - Operational Procedures

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STUDENT NAME:	DATE AND TIME:

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

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

02. 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

03. What does the abbreviation "H24" stand for?

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

04. What phenomenon is caused by cold air downdrafts with precipitation from a fully developed thunderstorm cloud?

a) Freezing rain
b) Gust front
c) Electrical discharge
d) Anvil-head top of Cb cloud

05. For what approximate time period can the short-time memory store information?

a) 10 to 20 seconds
b) 3 to 7 seconds
c) 30 to 40 seconds
d) 35 to 50 seconds

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06. 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:

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

07. The majority of aviation accidents are caused by...

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

08. For a fully inflated gas balloon at the same ambient pressure, envelope volume and lifting-gas temperature, what happens to lifting capacity when the outside air temperature decreases?

a) The lifting capacity decreases because the surrounding air becomes less dense
b) The lifting capacity is independent of the density of the surrounding air
c) The lifting capacity increases because the surrounding air becomes denser
d) The structural maximum permitted mass automatically increases with every temperature decrease

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

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

10. What is the minimum flight visibility in airspace "E" for an aircraft operating under VFR at FL75?

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

11. The rotational axis of the Earth runs through the...

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

12. 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

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

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

14. A fully inflated gas balloon is in level equilibrium. Its mass is reduced by 1% and it rises to a new equilibrium while releasing gas. In a simplified model where a 1% pressure decrease corresponds to 80 m of height, what is the approximate change in equilibrium altitude?

a) Equilibrium altitude increases by 800 m
b) Equilibrium altitude decreases by 800 m
c) Equilibrium altitude decreases by 80 m
d) Equilibrium altitude increases by 80 m

15. What is an indication for a macho attitude?

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

16. Which approximate, geometrical form describes the shape of the Earth best for navigation systems?

a) Sphere of ecliptical shape

b) Ellipsoid

c) Flat plate

d) Perfect sphere

17. What distance corresponds to one degree difference in latitude along any degree of longitude?

a) 60 km

b) 30 NM

c) 1 NM

d) 60 NM

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

a) Ground

b) Tower

c) Airfield

d) Control

19. Lower-than-standard temperature may lead to...

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

20. When must an ATIS message be updated?

a) Only every 30 minutes, regardless of changes

b) Immediately when a significant change occurs; pilots must use the current ATIS

c) Only once every hour, regardless of changes

d) Only at the request of an individual pilot

21. 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

22. For a fully inflated gas balloon at constant ambient pressure and envelope volume, assume both the lifting gas and outside air are initially at 250 K. If both warm by 1 K while excess lifting gas is released, what is the approximate change in net lifting capacity?

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

23. The towing rope of a gas balloon can be found on ...

a) The rip panel side

b) The sandpourer side

c) The sliding side

d) The entry side

24. In a simplified gas-balloon model, how does ascent below the pressure ceiling differ from ascent above it?

a) Below the pressure ceiling the balloon can climb indefinitely without becoming fully inflated

b) Above the pressure ceiling the envelope expands indefinitely without releasing gas

c) Below the pressure ceiling the lifting gas can expand; above it gas is released from the full envelope and lifting capacity decreases

d) Reaching the pressure ceiling has no effect on gas volume or lifting capacity

25. Aerostatic lift, amongst other factors, depends on...

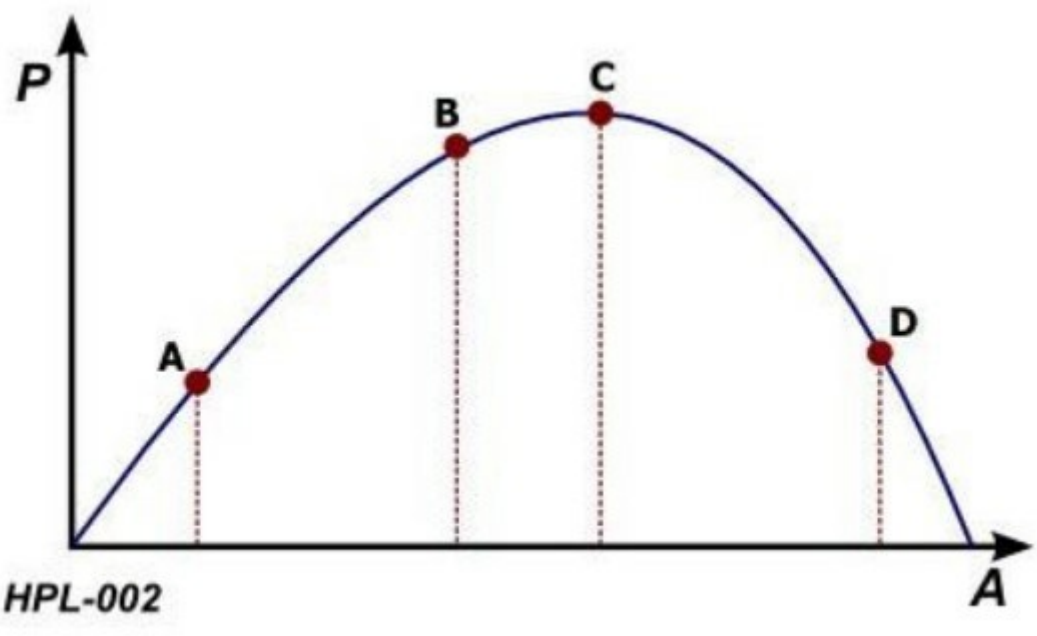
a) On the speed

b) Balloon mass

c) Shape of the envelope

d) Air density

26. Which labelled point represents the highest performance and the ideal level of arousal in the diagram? See figure (HPL-002). P = Performance; A = Arousal / Stress.



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

27. The vertical speed indicator measures the difference of pressure between...

a) The present dynamic pressure and the dynamic pressure of a previous moment
b) The present total pressure and the total pressure of a previous moment
c) The present dynamic pressure and the static pressure of a previous moment
d) The present static pressure and the static pressure of a previous moment

28. 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

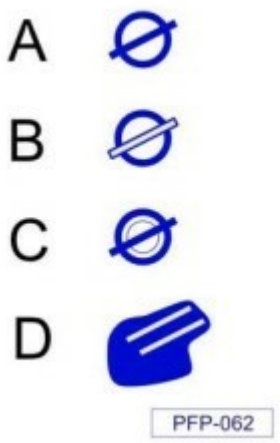
29. How will the sag of the pull rope change during descent?

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

30. 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

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



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

32. 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

33. 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

34. 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

35. On summerdays with calm winds, the balloon pilot has to expect:

a) With strongly heated surface layers
b) With a cold air pool on the ground
c) With wind shear
d) With a pronounced ground inversion

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

a) SSR-Code
b) Wind
c) Altitude
d) Runway in use

37. 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

38. What does a cloud coverage of "BKN" mean in a METAR weather report?

a) 5 to 7 eighths

b) 1 to 2 eighths

c) 8 eighths

d) 3 to 4 eighths

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

a) By vulcanisation

b) By stitching

c) By welding

d) By gluing

40. How does a gas react when released from a pressurized container?

a) The gas heats adiabatically due to expansion

b) The gas cools adiabatically due to expansion

c) The gas condenses inside the envelope

d) The gas cools due to thermal contact with environmental air

41. What is a latent error?

a) An error which has an immediate effect on the controls

b) An error which is made by the pilot actively and consciously

c) An error which remains undetected in the system for a long time

d) An error which only has consequences after landing

42. 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

43. What can solar heating of the lifting gas do to the pressure ceiling of a gas balloon before gas is released?

a) The pressure ceiling decreases
b) The pressure ceiling increases
c) The lifting gas always cools immediately
d) A sudden increase in rate of descent

44. The ratio between air pressures at different heights is referred to as:

a) Height value
b) Pressure number
c) Height ratio
d) Height number

45. 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

46. Under BOP.BAS.050(b), which of these balloon documents may be carried on the flight or stowed in the retrieve vehicle, as originals or copies, subject to any additional requirements of the States concerned?

a) The certificate of registration, certificate of airworthiness, AFM or equivalent, third-party liability insurance certificate and balloon logbook or equivalent
b) Only an EASA Form 1 and the crew members' passports
c) Only an aeroplane technical log, even when the aircraft is a balloon
d) Only a passenger list; no aircraft documentation is required

47. Assume two arbitrary points A and B on the same parallel of latitude, but not on the equator. Point A is located on 010°E and point B on 020°E. The rhumb line distance between A and B is always...

a) More than 300 NM
b) Less than 300 NM
c) Less than 600 NM
d) More than 600 NM

48. 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

49. What is the difference in time when the sun moves 10° of longitude?

a) 0:04 h
b) 0:40 h
c) 0:30 h
d) 1:00 h

50. The movement of air flowing apart is called...

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

51. 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, flattened Cu clouds
d) Near the rainfall areas of heavy showers or thunderstorms

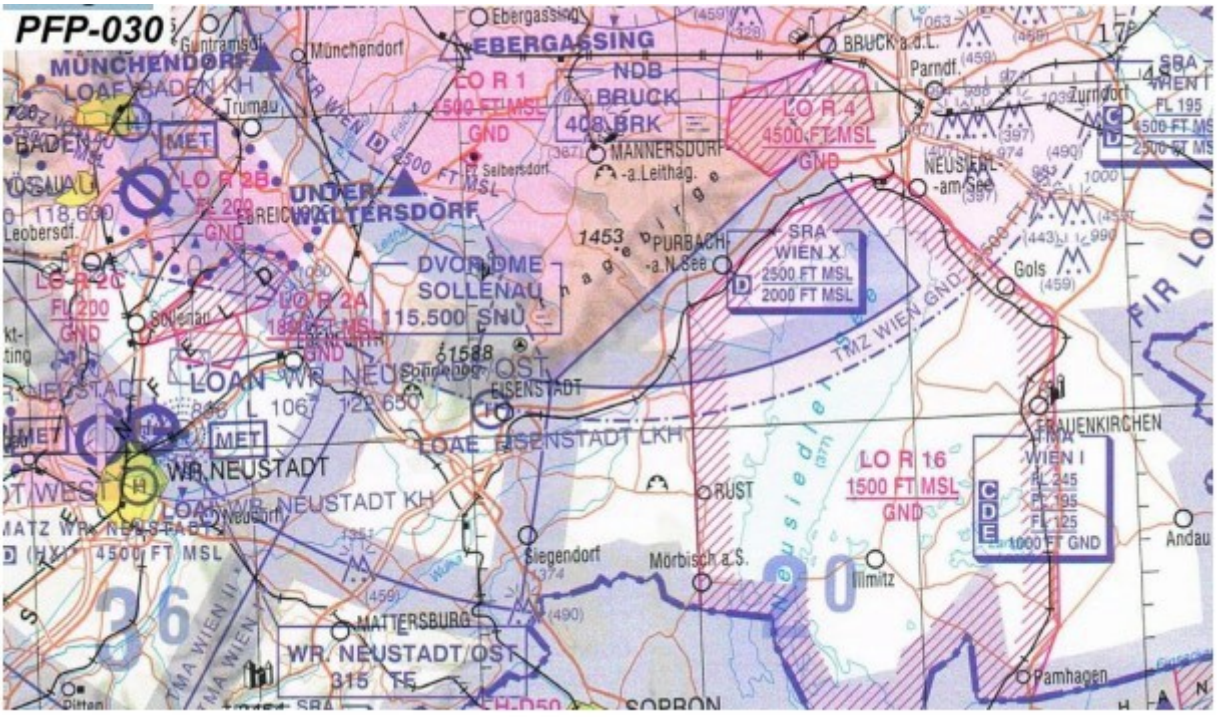
52. Who provides search and rescue service?

a) Only military organisations
b) Both military and civil organisations
c) Only civil organisations
d) International approved organisations

53. 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

54. The upper limit of LO R 4 equals... See annex (PFP-030)



a) 1500 ft MSL
b) 1500 ft AGL
c) 4500 ft MSL
d) 4500 ft AGL

55. 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)

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

56. The pressure at MSL in ISA conditions is...

a) 1013.25 hPa
b) 113.25 hPa
c) 1123 hPa
d) 15 hPa

57. What action should be recommended to a balloon pilot after landing with a gas balloon in a forest with large fir trees?

a) Quick release the gas from the balloon by activating the rip panel
b) Slowly draining the balloon by gently pulling the vents, until the basket touches ground
c) Transport the filled balloon by ground crew to a clear area, and dismount it there
d) Fix the balloon over night; try restart at next morning

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

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

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

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

60. The "spread" is defined as...

a) Difference between dew point and condensation point
b) Relation of actual to maximum possible humidity of air
c) Difference between actual temperature and dew point
d) Maximum amount of water vapour that can be contained in air

61. The minimum length of the towing rope is:

a) 20 m
b) 50 m
c) 100 m
d) 30 m

62. 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

63. What is the purpose of the semi-circular rule?

a) To avoid collisions by suspending turning manoeuvres
b) To fly without a filed flight plan in prescribed zones published in the AIP
c) To avoid collisions by reducing the probability of opposing traffic at the same altitude
d) To allow safe climbing or descending in a holding pattern

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

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

65. What effect has the elevation above MSL of an airfield on the carrying force and maximum take-off mass of a balloon?

a) The higher the elevation, the lower the carrying force
b) The lower the elevation, the lower the maximum take-off mass
c) The lower the elevation, the higher the maximum take-off mass
d) The higher the elevation, the greater the carrying force

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

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

67. From which altitude on does the body usually react to the decreasing atmospheric pressure?

a) 7000 feet
b) 12000 feet
c) 2000 feet
d) 10000 feet

68. 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

69. 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

70. A flight is called a "visual flight", if the...

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

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Response Scheme

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

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