Exam simulation

BPL Hot-Air Balloon Pilot Licence - Navigation

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STUDENT NAME:	DATE AND TIME:

01. In case of a water landing, when should the life jackets be inflated?

a) After landing, still in the basket, if leaving the basket has to be expected
b) During cruise over water
c) After leaving the basket
d) Before touchdown on water surface

02. 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

03. During setup of a hot-air balloon, the hull is damaged with a hole with a size of 1.50 m x 1.00 m. Is Take-Off permitted?

a) Yes, if all passengers agree
b) Yes, if permitted by the operating handbook
c) No, the hull has to be repaired first
d) Yes, if loading is reduced

04. London (EGLL) is located at 000° 10'W, Cardiff (EGFF) at 003° 44'W. The latitude of both positions can be considered as equal. What is the difference of sunrise and sunset times, expressed in UTC, between London and Cardiff?

a) In London the sunrise and sunset are about 4 minutes later than in Cardiff
b) In London the sunrise and sunset are about 14 minutes earlier than in Cardiff
c) In London the sunrise is 4 minutes later and sunset is 4 minutes earlier than in Cardiff
d) In London the sunrise is 14 minutes earlier and sunset is 14 minutes later than in Cardiff

05. 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

06. 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

07. What has to be done in case the balloon shows a strong tendency to climb while crossing thermals?

a) It must be heated continuously to maintain hull temperature
b) It must be heated stronger than usual
c) The burner has to be cut off immediately
d) The pull-rope has to be actuated immediately

08. 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

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

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

10. The altimeter can be checked on the ground by setting...

a) QNE and checking that the indication shows zero on the ground
b) QFF and comparing the indication with the airfield elevation
c) QNH and comparing the indication with the airfield elevation
d) QFE and comparing the indication with the airfield elevation

11. Regarding the type of cloud, precipitation is classified as...

a) Light and heavy precipitation
b) Rain and showers of rain
c) Showers of snow and rain
d) Prolonged rain and continuous rain

12. What has to be expected during descent above a heated water surface?

a) The rate of descent increases
b) The rate of descent decreases
c) The horizontal speed increases
d) The horizontal speed decreases

13. 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

14. Which dangerous attitudes are often combined?

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

15. A pilot can contact FIS (flight information service)...

a) Via internet
b) Via radio communication
c) By a personal visit
d) Via telephone

16. What weather conditions can be expected during "Foehn" on the windward side of a mountain range?

a) Layered clouds, mountains obscured, poor visibility, moderate or heavy rain
b) Scattered cumulus clouds with showers and thunderstorms
c) Calm wind and forming of high stratus clouds (high fog)
d) Dissipating clouds with unusual warming, accompanied by strong, gusty winds

17. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



NAV-002

a) 40000 NM
b) 12800 km
c) 10800 km
d) 21600 NM

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

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

19. 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

20. What is the meaning of the abbreviation "VMC"?

a) Variable meteorological conditions
b) Visual meteorological conditions
c) Instrument flight conditions
d) Visual flight rules

21. 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

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

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

23. Wake turbulence is caused by...

a) Wind shear at the wingtip of an aerofoil

b) Pressure compensation at the wingtip of an aerofoil

c) Jet blast behind a turbine engine

d) Turbulence at the downwind side of a mountain range

24. Which transponder code indicates a loss of radio communication?

a) 7700

b) 7600

c) 7000

d) 2000

25. 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

26. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are the TH and the DEV?

a) TH: 194°. DEV: +002°

b) TH: 172°. DEV: +002°

c) TH: 172°. DEV: -002°

d) TH: 194°. DEV: -002°

27. What information is provided in the general part (GEN) of the AIP?

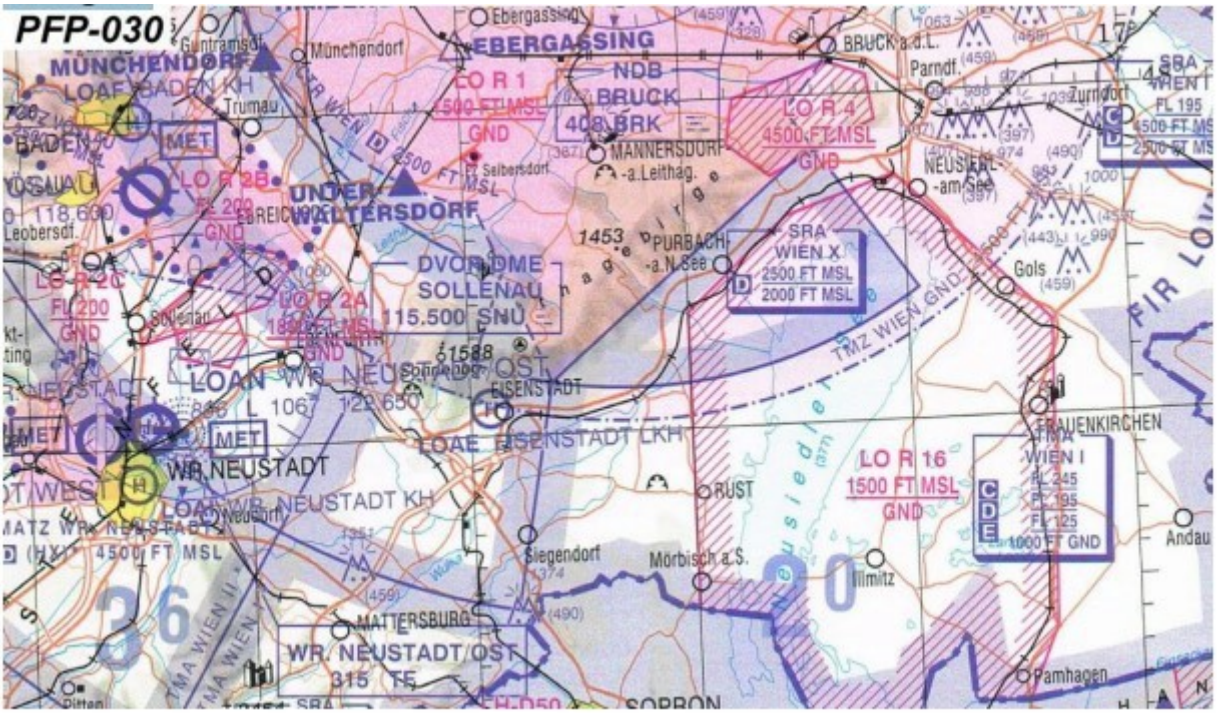
a) Warnings for aviation, ATS airspaces and routes, restricted and dangerous airspaces

b) Map icons, list of radio nav aids, time for sunrise and sunset, airport fees, air traffic control fees

c) Table of content, classification of airfields with corresponding maps, approach charts, taxi charts, restricted and dangerous airspaces

d) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods

28. 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

29. 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

30. What has to be considered before touchdown of a hot-air balloon during landing?

a) Inform the followers
b) Note the time
c) Cut off gas feed to the ignition flames
d) Turn off the radio

31. 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

32. 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

33. The stretch-out of the envelope of a hot-air balloon should be made:

a) To the lee side of the basket
b) To the windward side of the basket
c) To the sunward side of the basket
d) To the sun-averted side of the basket

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

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

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

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

36. Which are the properties of a Mercator chart?

a) The scale increases with latitude, great circles are depicted as curved lines, rhumb lines are depicted as straight lines

b) The scale is constant, great circles are depicted as curved lines, rhumb lines are depicted as straight lines

c) The scale increases with latitude, great circles are depicted as straight lines, rhumb lines are depicted as curved lines

d) The scale is constant, great circles are depicted as straight lines, rhumb lines are depicted as curved lines

37. 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

38. Which abbreviation is used for the term "abeam"?

a) ABB

b) ABA

c) ABM

d) ABE

39. 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

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

a) Oxygen transport

b) Immune defense

c) Blood sugar regulation

d) Blood coagulation

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

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

42. The hull of a hot-air balloon is made up by which material?

a) Synthetic fabric
b) Silk fabric
c) Linen fabric
d) Cotton fabric

43. Which force causes "wind"?

a) Thermal force
b) Pressure gradient force
c) Coriolis force
d) Centrifugal force

44. 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

45. How does air temperature change in ISA from MSL to approx. 10000 m height?

a) From +30° to -40°C
b) From -15° to 50°C
c) From +15° to -50°C
d) From +20° to -40°C

46. 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

47. The parapet height of a hot-air balloon basket is at least:

a) 100 cm, in commercial operation 110 cm
b) 80 cm, in commercial operation 100 cm
c) 120 cm, in commercial operation 130 cm
d) 110 cm, in commercial operation 110 cm

48. What process results in the formation of "orographic fog" ("hill fog")?

a) Prolonged radiation during nights clear of clouds
b) Warm, moist air is moved across a hill or a mountain range
c) Evaporation from warm, moist ground area into very cold air
d) Cold, moist air mixes with warm, moist air

49. On summer days with calm winds, the balloon pilot has to expect:

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

50. 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

51. What wind is reported as 225/15 ?

a) North-east wind with 15 km/h
b) South-west wind with 15 km/h
c) South-west wind with 15 kt
d) North-east wind with 15 kt

52. The basket ropes of a hot-air balloon are usually fixed to ...

a) The burner
b) The burner cage
c) To the scoop
d) The Nomex apron

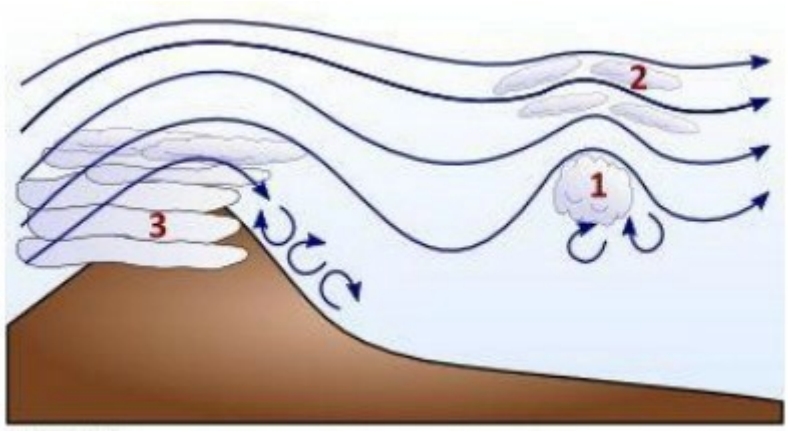
53. What is the purpose of "interception lines" in visual navigation?

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. A vertical speed indicator connected to a too big equalizing tank results in...

a) Indication too high
b) No indication
c) Indication too low
d) Mechanical overload

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



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

56. 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

57. The main blast valve is located where?

a) At the main cylinder
b) At the burner
c) At the hull equator
d) At the upper hull part

58. 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

59. 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

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

a) Inclination

b) WCA

c) Deviation

d) Variation

61. 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 correct the altimeter reading for system errors

c) To set the reference level for the altitude decoder of the transponder

d) To adjust the altimeter reading for non-standard temperature

62. Changing the shape of the envelope of a free balloon, e.g. by a gust, results in:

a) Increase in lift

b) Decrease in volume

c) Increase of displaced air

d) Decrease in weight

63. Which altitude marks the lower limit where the body is unable to completely compensate the effects of the low atmospheric pressure?

a) 12000 feet

b) 7000 feet

c) 22000 feet

d) 5000 feet

64. Under Article 33 of the Chicago Convention, on what basis are pilot licences recognised by other Contracting States for international navigation?

a) Every ICAO-compliant licence automatically permits flying any aircraft registered in any country

b) They are issued or rendered valid by the State of aircraft registry, and the requirements meet or exceed the applicable ICAO minimum standards

c) Recognition is independent of the State of aircraft registry and the issuing standards

d) A licence issued by one Contracting State can never be recognised by another

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

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

66. What does the abbreviation "FIR" stand for?

a) Flight integrity receiver

b) Flow integrity required

c) Flow information radar

d) Flight information region

67. What amount of ignitable mixture can be made from 1 L (0.001 m3) liquid propane gas?

a) 0.38 m3

b) 0.26 m3

c) 12 m3

d) 1.2 m3

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

a) Total air pressure is measured and compared to static pressure

b) Static air pressure is measured and compared against a vacuum

c) Measuring the present static air pressure and comparing it to the static air pressure inside a reservoir

d) Measuring the vertical acceleration through the displacement of a gimbal-mounted mass

69. In which way may an altimeter subscale which is set to an incorrect QNH lead to an incorrect altimeter reading?

a) If the subscale is set to a lower than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended

b) If the subscale is set to a lower than actual pressure, the indication is too low. This may lead to much closer proximity to the ground than intended

c) If the subscale is set to a higher than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended

d) If the subscale is set to a higher than actual pressure, the indication is too low. This may lead to much greater heights above the ground than intended

70. What is meant by "isothermal layer"?

a) A boundary area between two other layers within the atmosphere

b) An atmospheric layer where temperature decreases with increasing height

c) An atmospheric layer where temperature increases with increasing height

d) An atmospheric layer with constant temperature with increasing height

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Response Scheme

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

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

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