

Exam simulation

BPL Hot Air - Balloon Pilot License - Aircraft General Knowledge



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STUDENT NAME:

DATE AND TIME:

01. What is the mass of a "cube of air" with the edges 1 m long, at MSL according ISA?

- a) 0.1225 kg
- b) 12.25 kg
- c) 0.01225 kg
- d) 1.225 kg

02. 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

03. 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

04. Which altitude is displayed on the altimeter when set to a specific QFE?

- a) Altitude in relation to mean sea level
- b) Altitude in relation to the highest elevation within 10 km
- c) Altitude in relation to the 1013.25 hPa datum
- d) Altitude in relation to the air pressure at the reference airfield

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05. 5500 m equal...

- a) 7500 ft
- b) 18000 ft
- c) 10000 ft
- d) 30000 ft

06. 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

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

- a) Volume decreases, density decreases, temperature decreases
- b) Volume decreases, density increases, temperature increases
- c) Volume decreases, density increases, temperature decreases
- d) Volume increases, density decreases, temperature decreases

08. 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

09. What ground features should preferably be used for orientation during visual flight?

- a) Power lines
- b) Rivers, railroads, highways
- c) Border lines
- d) Farm tracks and creeks

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10. 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

11. Distress messages contain...

- a) Information concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight
- b) Information concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance
- c) Information concerning urgent spare parts which are required for a continuation of flight and which have to be ordered in advance
- d) Information concerning the apron personnel and which imply an imminent danger to landing aircraft

12. An ATIS is valid for...

- a) 45 minutes
- b) 30 minutes
- c) 60 minutes
- d) 10 minutes

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

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

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

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

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15. 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

16. 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

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

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

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

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

19. 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

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

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

21. 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

22. 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

23. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are TH and VAR?

- a) TH: 172°. VAR: 004° E
- b) TH: 194°. VAR: 004° E
- c) TH: 172°. VAR: 004° W
- d) TH: 194°. VAR: 004° W

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24. (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

25. 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

26. 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 %

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27. 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

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

- a) Shape of the envelope
- b) On the speed
- c) Balloon mass
- d) Air density

29. The altimeter is switched from local QNH to 1013.25 hPa...

- a) When climbing above the transition altitude
- b) At 4000 ft
- c) At the decision height
- d) When descending below FL 100

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

- a) Inhomogeneous
- b) Homogeneous
- c) Unstable
- d) Stable

31. After take-off with a balloon, obstacles at a distance of 600 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) 1 m/s
- b) 3 m/s
- c) 5 m/s
- d) 10 m/s

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32. 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

33. Which wind system may be dangerous for balloon rides in the Alps?

- a) Bora
- b) Scirocco
- c) Mistral
- d) Foehn

34. What process results in the formation of "advection fog"?

- a) Warm, moist air is moved across cold ground areas
- b) Cold, moist air is being moved across warm ground areas
- c) Prolonged radiation during nights clear of clouds
- d) Cold, moist air mixes with warm, moist air

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

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

36. 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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37. 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

38. What weather conditions in Central Europe are typically found in high pressure areas during summer?

- a) Small isobar spacing with strong prevailing northerly winds
- b) Large isobar spacing with calm winds, formation of local wind systems
- c) Large isobar spacing with strong prevailing westerly winds
- d) Small isobar spacing with calm winds, formation of local wind systems

39. 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

40. Regularity messages are messages...

- a) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance
- b) Concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight
- c) Sent by an aircraft operating agency or an aircraft of immediate concern to an aircraft in flight
- d) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation

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41. Up to which altitude is an overflight prohibited according to the NOTAM? See figure (PPF-024)

A4604/11 NOTAMN

- Q)
EDWW/QROLP/IV/NBO/W/000/095/5155N01037E004
- A) EDWW
B) 1111180800 C) 1111181200
E) OVERFLYING PROHIBITED FOR ALL TRAFFIC RADIUS
3.35NM CENTERED AROUND 515436N 0103725E DUE
TO DEMOLITION OF EXPLOSIVES AT ECKERTHAL,
(25NM S BRAUNSCHWEIG NDB BRU).
F) GND
G) 9500 FT AMSL

- a) Flight Level 95
b) Altitude 9500 m MSL
c) Height 9500 ft
d) Altitude 9500 ft MSL

42. 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

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

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

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44. What is the purpose of the sounding pipe valve?

- a) It allows pressure equalization during cruise at high altitude
- b) To indicate the volumetric filling limit
- c) It prevents air from entering the burner system
- d) For venting the liquid gas container bottle

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

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

46. Which weather chart shows the actual air pressure as in MSL along with pressure centers and fronts?

- a) Wind chart
- b) Hypsometric chart
- c) Prognostic chart
- d) Surface weather chart

47. 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 thousand decimal five zero
- d) One one niner decimal five zero zero

48. The dynamic lift created by airflow across the top of the envelope of a balloon on the ground is referred to as?

- a) Lower lift
- b) Upper lift
- c) False lift
- d) Anti-ballast

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49. What has to be considered when entering an RMZ?

- a) To obtain a clearance to enter this area
- b) The transponder has to be switched on Mode C and squawk 7000
- c) To permanently monitor the radio and if possible to establish radio contact
- d) To obtain a clearance from the local aviation authority

50. 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

51. Times are transmitted as...

- a) Standard time
- b) Time zone time
- c) Local time
- d) UTC

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

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

53. 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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54. 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

55. 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"

56. What weather development will result from convergence at ground level?

- a) Ascending air and cloud formation
- b) Ascending air and cloud dissipation
- c) Descending air and cloud formation
- d) Descending air and cloud dissipation

57. 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

58. 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

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59. 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

60. Under which conditions, no hazards should be expected for a balloon ride?

- a) With high pressure areas before sunset
- b) Close to showers or thunderstorms
- c) With a warm front approaching
- d) With a cold front approaching

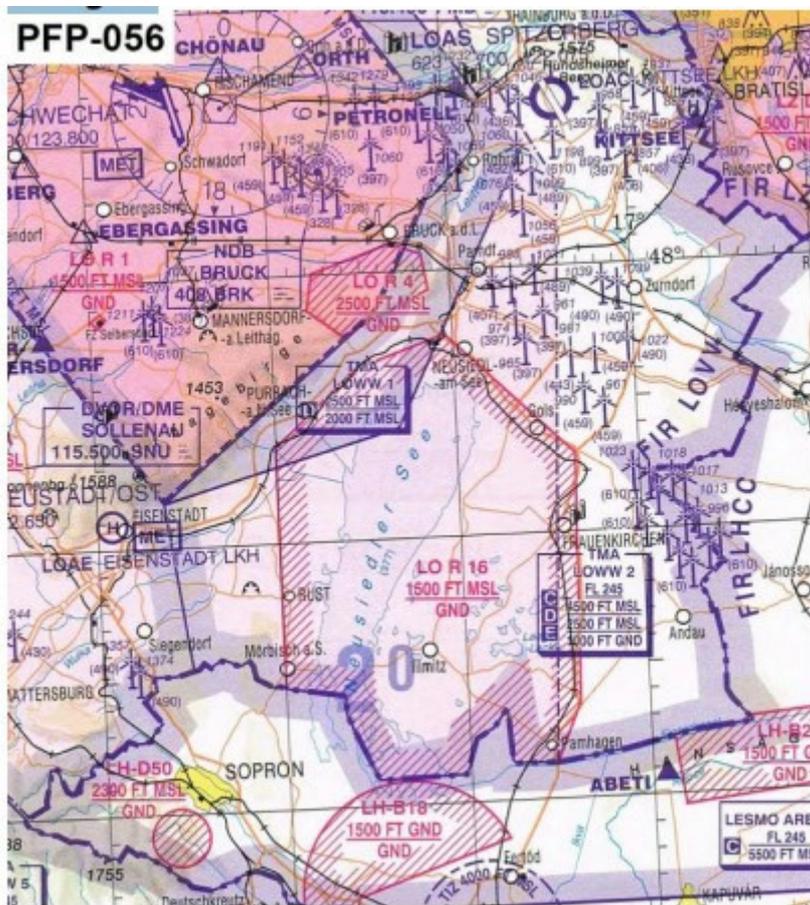
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61. The upper limit of LO R 16 equals... See annex (PFP-056)



- a) FL150
- b) 1500 ft GND
- c) 1500 ft MSL
- d) 1500 m MSL

62. An inversion layer close to the ground can be caused by...

- a) Ground cooling during the night
- b) Large-scale lifting of air
- c) Thickening of clouds in medium layers
- d) Intensifying and gusting winds

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63. What statement is correct with regard to the density of a gas?

- a) The density increases with increasing temperature and constant volume
- b) The density decreases with decreasing volume and constant temperature
- c) The density decreases with increasing temperature and constant volume
- d) The density decreases with increasing temperature and constant pressure

64. 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

65. 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

66. 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

67. 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

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68. Under which circumstances is it more likely to accept higher risks?

- a) During check flights due to a high level of nervousness
- b) During flight planning when excellent weather is forecast
- c) Due to group-dynamic effects
- d) If there is not enough information available

69. Which of the following options are possible SSR-Transponder modes?

- a) B, R, S
- b) A, C, S
- c) A, C, R
- d) B, C, V

70. 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

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Response Scheme

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

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