

Exam simulation

BPL Hot Air - Balloon Pilot License - Air Law



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STUDENT NAME:

DATE AND TIME:

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

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

02. 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

03. 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

04. 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

05. 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

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06. 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

07. 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

08. What is the distance between the parallels of latitude 48°N and 49°N along a meridian line?

- a) 10 NM
- b) 111 NM
- c) 60 NM
- d) 1 NM

09. In what cases is visibility transmitted in kilometers?

- a) Up to 5 km
- b) Greater than 5 km
- c) Up to 10 km
- d) Greater than 10 km

10. 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

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11. Which process may result in an inversion layer at about 5000 ft (1500 m) height?

- a) Intensive sunlight insolation during a warm summer day
- b) Ground cooling by radiation during the night
- c) Advection of cool air in the upper troposphere
- d) Widespread descending air within a high pressure area

12. 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

13. At temperature below 0 °C the pressure at the burner is at 0.2 MPa (2 bar). Is take-off permissible with the hot air balloon?

- a) No, pressure at burner is too low
- b) Only with double-burner system installed
- c) Yes, at low temperatures a low hull temperature is sufficient
- d) Yes, not a problem

14. What does a readability of 2 indicate?

- a) The transmission is readable but with difficulty
- b) The transmission is perfectly readable
- c) The transmission is unreadable
- d) The transmission is readable now and then

15. Which phrase does a pilot use when he / she wants to check the readability of his / her transmission?

- a) What is the communication like?
- b) You read me five
- c) How do you read?
- d) Request readability

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16. Which air traffic services can be expected within an FIR (flight information region)?

- a) FIS (flight information service) ALR (alerting service)
- b) ATC (air traffic control) FIS (flight information service)
- c) AIS (aeronautical information service) SAR (search and rescue)
- d) ATC (air traffic control) AIS (aeronautical information service)

17. 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

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

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

19. With Central European Summer Time (CEST) given as UTC+2, what UTC time corresponds to 1600 CEST?

- a) 1700 UTC
- b) 1600 UTC
- c) 1500 UTC
- d) 1400 UTC

20. What is the purpose of the vaporizer coils of the burner system?

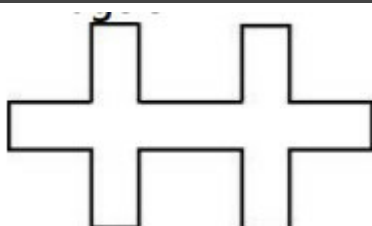
- a) To induce a rotation movement in the liquid gas to get a better mixture
- b) For cooling of the liquid gas after exiting the burner nozzles
- c) To heat the liquid gas, so it will vaporize immediately after exiting the burner nozzle
- d) To vaporize the liquid gas, so it will be emitted from the burner nozzle in gaseous form



21. 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

22. What is the meaning of this sign at an aerodrome? See figure (ALW-011)



- a) Landing prohibited for a longer period
- b) Glider flying is in progress
- c) After take-off and before landing all turns have to be made to the right
- d) Caution, manoeuvring area is poor

23. 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

24. Which statement is correct with regard to the polar axis of the Earth?

- a) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is at an angle of 23.5° to the plane of the equator
- b) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is perpendicular to the plane of the equator
- c) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is perpendicular to the plane of the equator
- d) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is at an angle of 66.5° to the plane of the equator

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25. 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

26. 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

27. The final sinkrate of a hot-air balloon is achieved after descent over a vertical distance of:

- a) 1000 - 2000 m
- b) 50 - 100 m
- c) 250 - 450 m
- d) 500 - 1000 m

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28. What situation may result in the occurrence of severe wind shear?

- a) When a shower is visible close to the airfield
- b) Cross-country flying below Cu clouds with about 4 octas coverage
- c) During final approach, 30 min after a heavy shower has passed the airfield
- d) Flying ahead of a warm front with visible Ci clouds

29. 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

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

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

31. What should be considered regarding a scheduled flight over water, when land cannot be reached in case of an emergency landing?

- a) Contact to the nearest ATC shall consist during the whole flight
- b) The flight plan has to contain the exact waypoints
- c) For all passengers there must be life jackets or lifeboats present
- d) Transponder code 7600 has to be set during the whole flight

32. 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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33. 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

34. 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

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

- a) Steady wind from direction of shower
- b) Steady wind into direction of shower
- c) Strong gust from variable directions
- d) Calm winds during passage of a shower

36. 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

37. At high altitude, the complete heating system of a hot-air balloon fails. What maximum rate of descent has to be expected upon reaching ground?

- a) Approximately 2.5 m/s
- b) Approximately 4.5 m/s
- c) Approximately 6.5 m/s
- d) Approximately 8.5 m/s

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

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

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

- a) An altitude indication which is too high
- b) An altitude indication which is too low
- c) A correct altitude indication as long as the altimeter subscale is set to correct for non-standard temperature
- d) A blockage of the Pitot tube by ice, freezing the altimeter indication to its present value

40. 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

41. 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

42. What cloud type can typically be observed across widespread high pressure areas during summer?

- a) Squall lines and thunderstorms
- b) Overcast low stratus
- c) Overcast Ns clouds
- d) Scattered Cu clouds



43. What chart shows areas of precipitation?

- a) Radar picture
- b) GAFOR
- c) Wind chart
- d) Satellite picture

44. How can you obtain meteorological information concerning airports during a cross-country flight?

- a) AIRMET
- b) VOLMET
- c) METAR
- d) GAMET

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

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

46. 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

47. 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



48. What does a cloud coverage of "SCT" mean in a METAR weather report?

- a) 5 to 7 eighths
- b) 3 to 4 eighths
- c) 1 to 2 eighths
- d) 8 eighths

49. If heating is stopped and the parachute vent is not activated, a hot-air balloon reaches a final sinkrate of approximately:

- a) 6 m/s
- b) 2 m/s
- c) 10 m/s
- d) 20 m/s

50. 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

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

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

52. What does a readability of 5 indicate?

- a) The transmission is perfectly readable
- b) The transmission is readable but with difficulty
- c) The transmission is unreadable
- d) The transmission is readable now and then



53. 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

54. 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

55. The altimeter has to be set to what value in order to show zero on ground?

- a) QNH
- b) QTE
- c) QFE
- d) QNE

56. 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

57. 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



58. 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

59. Vienna (LOWW) is located at 016° 34'E, Salzburg (LOWS) at 013° 00'E. The latitude of both positions can be considered as equal. What is the difference of sunrise and sunset times, expressed in UTC, between Wien and Salzburg?

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

60. What is the meaning of the phrase "Approved"?

- a) An error has been made in this transmission. The correct version is...
- b) Permission for proposed action is granted
- c) I have received all of your last transmission
- d) I understand your message and will comply with it

61. What is the meaning of the phrase "Correction"?

- a) Permission for proposed action is granted
- b) An error has been made in this transmission. The correct version is...
- c) I have received all of your last transmission
- d) I understand your message and will comply with it

62. Which are the different parts of the Aeronautical Information Publication (AIP)?

- a) GEN ENR AD
- b) GEN MET RAC
- c) GEN COM MET
- d) GEN AGA COM



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. 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

65. What factors may indicate a tendency to fog formation?

- a) Low pressure, increasing temperature
- b) Strong winds, decreasing temperature
- c) Low spread, increasing temperature
- d) Low spread, decreasing temperature

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

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

67. What pressure pattern may result from cold-air inflow in high tropospheric layers?

- a) Formation of a low in the upper troposphere
- b) Formation of a large ground low
- c) Alternating pressure
- d) Formation of a high in the upper troposphere

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68. What is the mean height of the tropopause according to ISA (ICAO Standard Atmosphere)?

- a) 36000 m
- b) 11000 ft
- c) 11000 m
- d) 18000 ft

69. "Foehn" conditions usually develop with...

- a) Instability, widespread air blown against a mountain ridge
- b) Stability, widespread air blown against a mountain ridge
- c) Stability, high pressure area with calm wind
- d) Instability, high pressure area with calm wind

70. Which of the following messages has the highest priority?

- a) Turn left
- b) Request QDM
- c) QNH 1013
- d) Wind 300 degrees, 5 knots

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Response Scheme

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

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