

Exam simulation

Exam BPL Gas - Balloon Pilot License - Air Law



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STUDENT NAME:

DATE AND TIME:

01. How does the norm height of a gas balloon with maximum differential pressure change by dropping ballast?

- a) It increases by 8 m when total mass is reduced by 10%
- b) It increases by 80 m when total mass is reduced by 1%
- c) It decreases by 8 m when total mass is reduced by 10%
- d) It decreases by 80 m when total mass is reduced by 1%

02. 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

03. 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

04. 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 higher than actual pressure, the indication is too low. This may lead to much greater heights above the ground than intended
- b) 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
- c) 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
- d) 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

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05. 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

06. 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

07. What may be the cause of controller icing?

- a) A cloud has been entered at temperature between +5 and -10°C
- b) Temperature in the controller is between -1 °C and -5 °C
- c) Relative humidity is higher than 50%
- d) Liquid gas has entered the controller

08. The aerostatic lift corresponds to which force?

- a) The dynamic force due to airstream across the top of the hull
- b) The weight of the displaced air
- c) The drag due to airstream around the balloon envelope
- d) The weight of the balloon less ballast

09. 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

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

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

11. The measurement of altitude is based on the change of the...

- a) Dynamic pressure
- b) Static pressure
- c) Differential pressure
- d) Total pressure

12. 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

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

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

14. Where are the two polar circles?

- a) 23.5° north and south of the poles
- b) 23.5° north and south of the equator
- c) At a latitude of 20.5°S and 20.5°N
- d) 20.5° south of the poles

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15. 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

16. 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

17. What information is provided in the part "AD" of the AIP?

- a) Access restrictions for airfields, passenger controls, requirements for pilots, license samples and validity periods
- b) Table of content, classification of airfields with corresponding maps, approach charts, taxi charts
- c) Warnings for aviation, ATS airspaces and routes, restricted and dangerous airspaces
- d) Map icons, list of radio nav aids, time for sunrise and sunset, airport fees, air traffic control fees

18. Clouds are basically distinguished by what types?

- a) Cumulus and stratiform clouds
- b) Layered and lifted clouds
- c) Thunderstorm and shower clouds
- d) Stratiform and ice clouds

19. What is a direct consequence of increase of the carrying gas temperature at a gas balloon with maximum differential pressure?

- a) Climb force decreases
- b) Weight force increases
- c) Lift force decreases
- d) Load-bearing capability increases

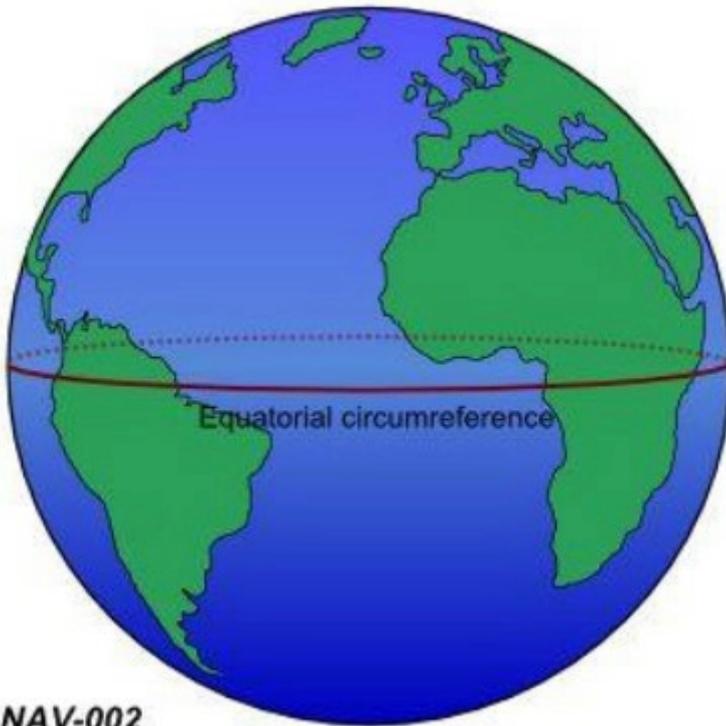
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20. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



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

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

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

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

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

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23. The burst of a hydrogen pressure line may result in what risk?

- a) The risk of hydrogen collecting in the basket and causing breath shortness
- b) The risk of hydrogen self-igniting and burning with a bright flame
- c) The risk of hydrogen dissipating to the atmosphere and poisoning the air
- d) The risk of hydrogen self-igniting and burning with invisible flame

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

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

25. 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

26. 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 adjust the altimeter reading for non-standard temperature
- c) To set the reference level for the altitude decoder of the transponder
- d) To correct the altimeter reading for system errors

27. 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

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

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

29. 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

30. The directional information "12 o'clock" is correctly transmitted as...

- a) Twelve o'clock
- b) One two
- c) One two hundred
- d) One two o'clock

31. 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

32. 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

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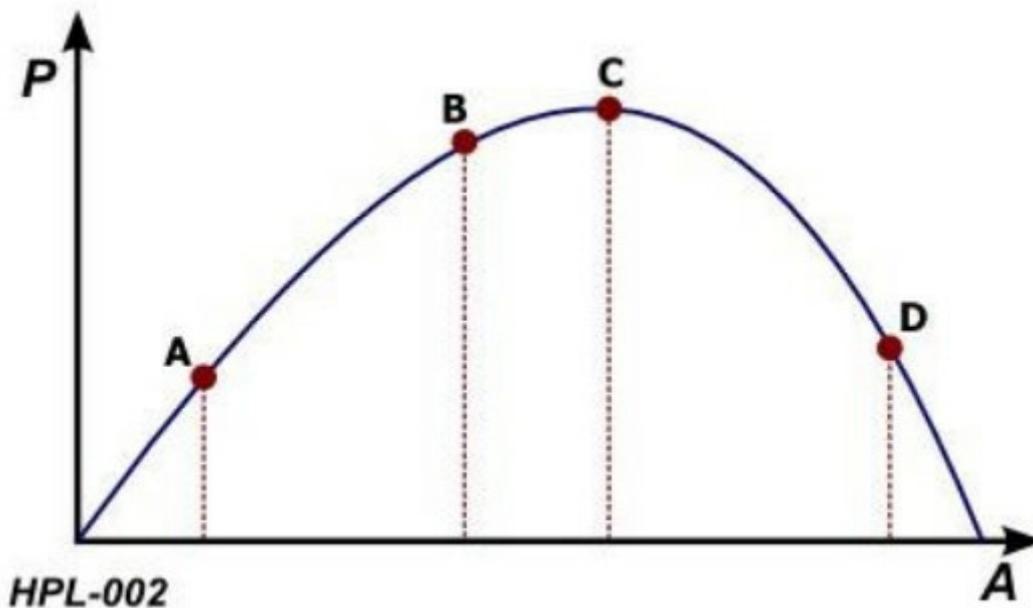
33. A frequency of 119.500 MHz is correctly transmitted as...

- 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

34. The force resulting from the (positive) difference from load-bearing capacity and weight force, is referred to as:

- a) Load force
- b) Upper force
- c) Climb force
- d) Lift force

35. 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

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36. While overflying a waypoint, it is stated that a distance of 2 NM has been taken 10 min. What will be the expected time of endurance for the complete distance of 18 NM?

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

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

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

38. 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

39. 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

40. 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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41. The majority of aviation accidents are caused by...

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

42. Which force causes "wind"?

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

43. 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

44. How often shall a blind transmission be made?

- a) Four times
- b) Two times
- c) Three times
- d) One time

45. 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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46. Damages at the basket ropes have to be fixed by:

- a) By the balloon pilot
- b) Upon the next Aeronautical Recurrence Certification
- c) By an Approved Aeronautical Workshop
- d) By tying with a part of a spare rope (during cruise)

47. Doubling the pressure of a dry gas at constant temperature results in a change of the volume to:

- a) Double the previous value
- b) Four times the previous value
- c) Half the previous value
- d) A quarter of the previous value

48. During a balloon ride, visibility continuously becomes poorer, also cloud base decreases in direction of the current track. How should the balloon pilot react to this situation?

- a) Continue ride in remaining altitude
- b) Use next best chance for landing
- c) Use GPS or radio navigation to continue ride in clouds
- d) Break through the clouds and continue above clouds

49. Which characteristic is important when choosing sunglasses used by pilots?

- a) Curved sidepiece
- b) Unbreakable
- c) No UV filter
- d) Non-polarised

50. What does a cloud coverage of "FEW" mean in a METAR weather report?

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

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51. Given the following masses: Empty mass 240 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Up to which pressure altitude can the balloon climb with 5 persons and 4 gas containers in the basket, assuming temperatures 10° below ISA? (use attachment ECQB-PPL_BPL001)

Auszug aus dem Flughandbuch



- a) 3000 ft
- b) 17000 ft
- c) 13000 ft
- d) 7000 ft

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

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

53. At what rate does the temperature change with increasing height according to ISA (ICAO Standard Atmosphere) within the troposphere?

- a) Increases by 2° C / 1000 ft
- b) Decreases by 2° C / 100 m
- c) Decreases by 2° C / 1000 ft
- d) Increases by 2° C / 100 m

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54. What cloud type does the picture show? See figure (MET-002).



- a) Altus
- b) Stratus
- c) Cumulus
- d) Cirrus

55. Which distances to clouds have to be maintained during a VFR flight in airspaces C, D and E?

- a) 1000 m horizontally, 300 m vertically
- b) 1000 m horizontally, 1500 ft vertically
- c) 1500 m horizontally, 1000 m vertically
- d) 1500 m horizontally, 1000 ft vertically

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56. 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

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

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

58. A boundary between a cold polar air mass and a warm subtropical air mass showing no horizontal displacement is called...

- a) Warm front
- b) Occluded front
- c) Cold front
- d) Stationary front

59. A pilot license issued in accordance with ICAO Annex 1 is valid in...

- a) The country where the license was acquired
- b) All ICAO countries
- c) The country where the license was issued
- d) Those countries that have accepted this license on application

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

- a) Flight integrity receiver
- b) Flow integrity required
- c) Flow information radar
- d) Flight information region

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61. 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

62. Which transponder code indicates a radio failure?

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

63. In what case is visibility transmitted in meters?

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

64. Which of the following symptoms may indicate hypoxia?

- a) Blue marks all over the body
- b) Blue discolouration of lips and fingernails
- c) Muscle cramps in the upper body area
- d) Joint pain in knees and feet

65. 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

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

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

67. 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

68. 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

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

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

70. 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

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Response Scheme

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

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