

Exam simulation

Exam BPL Gas - Balloon Pilot License - Aircraft General Knowledge



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STUDENT NAME:

DATE AND TIME:

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

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

02. 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

03. What condition may prevent the formation of "radiation fog"?

- a) Overcast cloud cover
- b) Clear night, no clouds
- c) Low spread
- d) Calm wind

04. 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

05. 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

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06. 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

07. Where has the ballast aboard a gas balloon to be stored during cruise?

- a) Inside the basket
- b) Below the net ending ropes
- c) At the outside wall of the basket
- d) Inside the tow shield

08. The emergency opening of a gas balloon is located where?

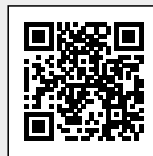
- a) To the side of the appendix
- b) At the upper pole
- c) At the equator
- d) To the side of the valve

09. 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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10. (For this question, please use annex PFP-061) According ICAO, what symbol indicates a group of unlighted obstacles?



PFP-061

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

11. A heading of 285 degrees is correctly transmitted as...

- a) Two hundred eighty-five
- b) Two eight five
- c) Two eight five hundred
- d) Two hundred eight five

12. If there is any doubt about ambiguity, a time of 1620 is to be transmitted as...

- a) One six two zero
- b) Sixteen twenty
- c) One thousand six hundred two zero
- d) Two zero

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

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

14. What is the call sign of the flight information service?

- a) Advice
- b) Flight information
- c) Info
- d) Information

15. Which answer contains every state of water found in the atmosphere?

- a) Liquid, solid and gaseous
- b) Gaseous and liquid
- c) Liquid and solid
- d) Liquid

16. A true altitude is...

- a) A height above ground level corrected for non-standard pressure
- b) An altitude above mean sea level corrected for non-standard temperature
- c) A height above ground level corrected for non-standard temperature
- d) A pressure altitude corrected for non-standard temperature

17. 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

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18. What is the relationship between pressure and volume of a dry gas at constant temperature?

- a) The volume increases by a factor of 4 with double pressure
- b) The volume is inversely proportional to pressure
- c) The ratio between pressure and volume is constant
- d) The volume increases proportional with pressure

19. While overflying a waypoint, it is stated that a distance of 3 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) 90 min
- c) 12 min
- d) 180 min

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

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

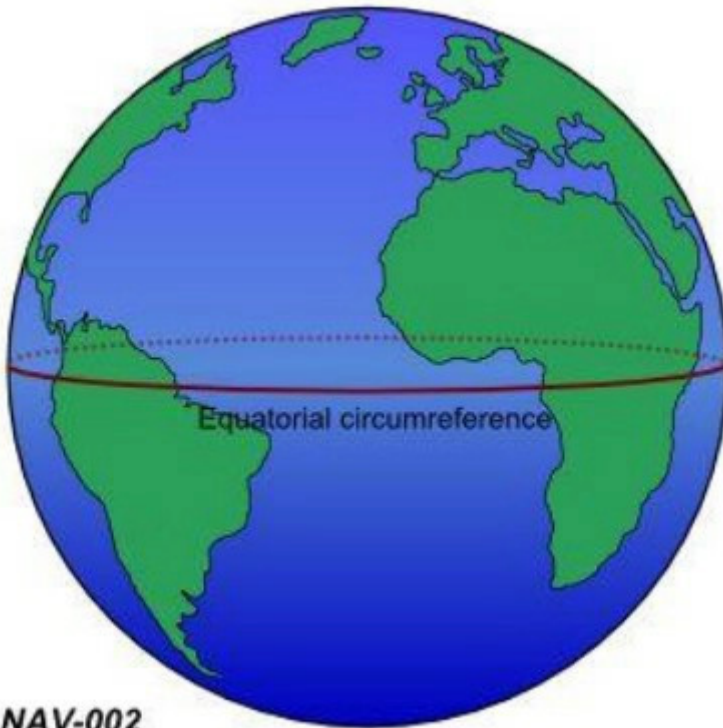
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21. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



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

22. In a given height, a given amount of ballast is unloaded from a gas balloon. How is the increase in height at 5500 m different from the increase in height at MSL by unloading the same amount of ballast?

- a) At 5500 m the increase in height is twice as high
- b) At 5500 m the increase in height is three times as high
- c) At both heights the same increase in height is observed
- d) At 5500 m the increase in height is four times as high

23. Which dangerous attitudes are often combined?

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

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24. The purpose of the drag lines of the parachute is ...

- a) To transfer the carrying force of the balloon in the top opening area
- b) To transfer the force from the pull rope to the parachute
- c) To keep the parachute in the center of the top opening
- d) To transfer the force from the pull rope to the free-balloon hull

25. How many satellites are necessary for a precise and verified three-dimensional determination of the position?

- a) Four
- b) Five
- c) Two
- d) Three

26. The term ,magnetic course' (MC) is defined as...

- a) The angle between true north and the course line
- b) The direction from an arbitrary point on Earth to the magnetic north pole
- c) The direction from an arbitrary point on Earth to the geographic North Pole
- d) The angle between magnetic north and the course line

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

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

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

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

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29. The density of helium gas under standard conditions is:

- a) 0,2 kg / m³
- b) 2 kg / m³
- c) 0,02 g / m³
- d) 0,2 g / m³

30. With pressure and temperature given, any gas being heavier or lighter than air depends on what?

- a) On the content of water vapour in the gas
- b) On the mean kinetic energy of the molecules
- c) On the number of gas molecules
- d) On the molecule mass of the gas

31. 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

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

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

33. An altitude of 4500 ft is transmitted as...

- a) Four five zero zero
- b) Four thousand five zero zero
- c) Four five thousand
- d) Four thousand five hundred

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

- a) Inclination
- b) WCA
- c) Deviation
- d) Variation

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

- a) Measuring the present static air pressure and comparing it to the static air pressure inside a reservoir
- b) Static air pressure is measured and compared against a vacuum
- c) Measuring the vertical acceleration through the displacement of a gimbal-mounted mass
- d) Total air pressure is measured and compared to static pressure

36. 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

37. Given: TC: 179°; WCA: -12°; VAR: 004° E; DEV: +002° What are MH and MC?

- a) MH: 167°. MC: 175°
- b) MH: 167°. MC: 161°
- c) MH: 163°. MC: 175°
- d) MH: 163°. MC: 161°

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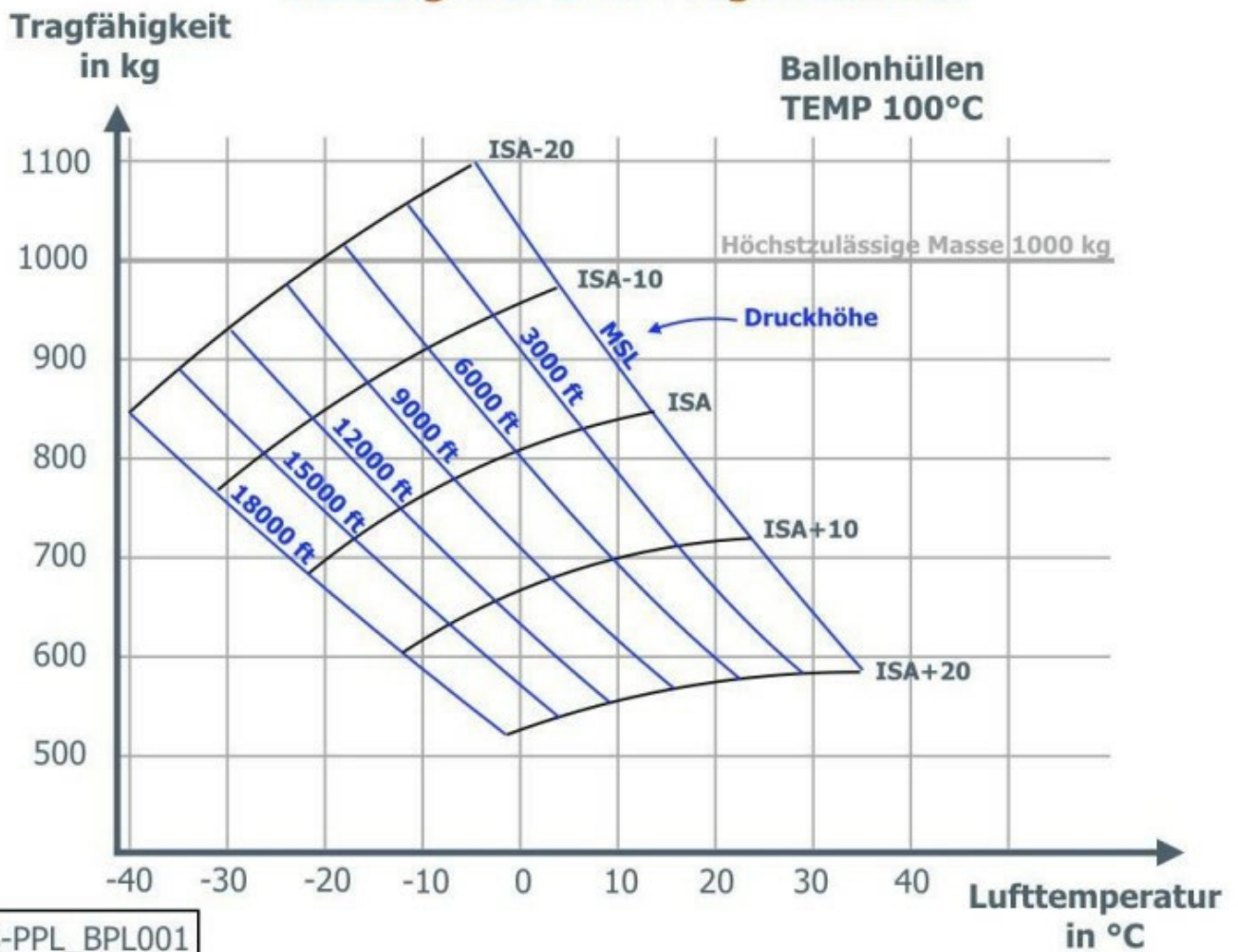
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38. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming temperature ISA+10, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 12.000 ft ? (use attachment ECQB-PPL_BPL001)

Auszug aus dem Flughandbuch



- a) 3
- b) 5
- c) 4
- d) 2

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

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

40. 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

41. The maximum number of passengers can be found ...

- a) In the certificate of registration
- b) In the operating handbook
- c) In the Flight Log book
- d) In the airworthiness certificate

42. 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

43. 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°

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44. The minimum length of the towing rope is:

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

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

- a) Aeronautical instrument requirement report
- b) Aircraft report
- c) Automatic identification report
- d) Aeronautical information report

46. 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

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

- a) VAR: 004° E. DEV: -002°
- b) VAR: 004° W. DEV: +002°
- c) VAR: 004° E. DEV: +002°
- d) VAR: 004° W. DEV: -002°

48. Wake turbulence is particularly strong...

- a) When flying at high speeds
- b) When flying at high altitudes
- c) When flying at low speeds
- d) When flying at low altitudes

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49. 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

50. How does the norm height of a gas balloon with maximum differential pressure change, when its mass is reduced by 1%?

- a) Norm height increases by 800 m
- b) Norm height decreases by 800 m
- c) Norm height decreases by 80 m
- d) Norm height increases by 80 m

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51. 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

52. Which altitude is displayed on the altimeter when set to a specific QNH?

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

53. What is the difference between a gas balloon at or below maximum differential pressure during climb?

- a) The balloon at maximum differential pressure climbs with constant rate to unlimited height
- b) The balloon below maximum differential pressure climbs with constant rate up to maximum differential pressure height
- c) The balloon below maximum differential pressure climbs with constant rate to unlimited height
- d) The balloon at maximum differential pressure climbs with constant rate up to maximum differential pressure height

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

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

56. A flight level is a...

- a) True altitude
- b) Density altitude
- c) Pressure altitude
- d) Altitude above ground

57. 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

58. Visual illusions are mostly caused by...

- a) Misinterpretation of the brain
- b) Binocular vision
- c) Rapid eye movements
- d) Colour blindness

59. 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

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60. During a flight in an air mass with a temperature equal to ISA and the QNH set correctly, the indicated altitude is...

- a) Higher than the true altitude
- b) Lower than the true altitude
- c) Equal to the standard atmosphere
- d) Equal to the true altitude

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

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

62. 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

63. 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

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

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

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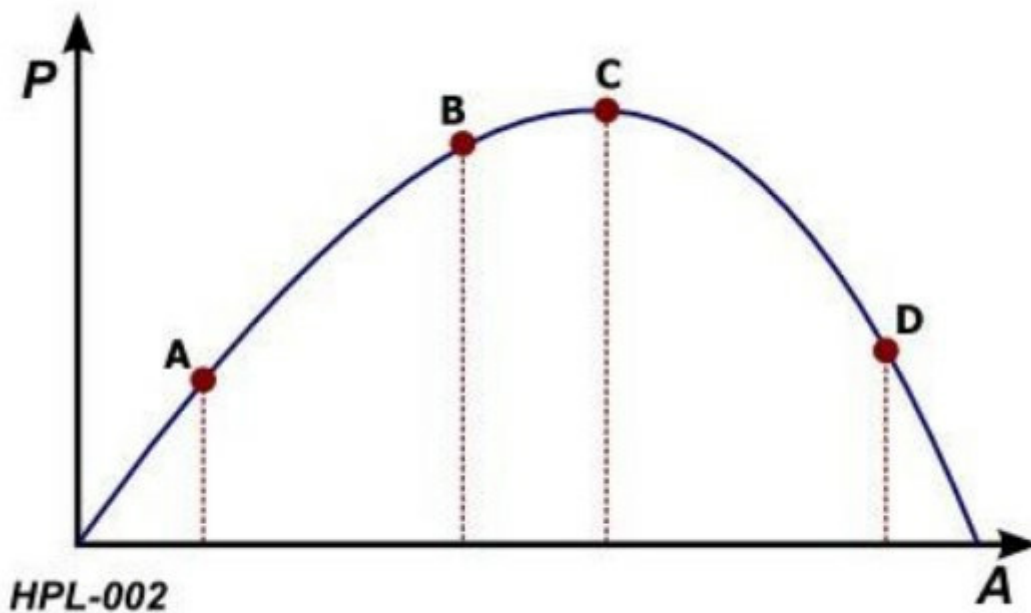
65. What conditions are favourable for the formation of thunderstorms?

- 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

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

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

67. At which point in the diagram will a pilot find himself to be overstrained? See figure (HPL-002) P = Performance A = Arousal / Stress



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

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68. When using a GPS for tracking to the next waypoint, a deviation indication is shown by a vertical bar and dots to the left and to the right of the bar. What statement describes the correct interpretation of the display?

- a) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection is ± 10 NM
- b) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection depends on the operating mode of the GPS
- c) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection is $\pm 10^\circ$
- d) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection depends on the operating mode of the GPS

69. What statement is correct with regard to change in temperature?

- a) During climb, the carrying gas warms due to thermal exchange with environmental air
- b) During descent, the carrying gas warms adiabatically
- c) During descent, the carrying gas warms due to thermal exchange with environmental air
- d) During climb, the carrying gas warms adiabatically

70. 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

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Response Scheme

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

01: **A**

02: **C**

03: **A**

04: **D**

05: **D**

06: **D**

07: **A**

08: **A**

09: **C**

10: **A**

11: **B**

12: **A**

13: **C**

14: **D**

15: **A**

16: **B**

17: **A**

18: **B**

19: **A**

20: **B**

21: **D**

22: **A**

23: **B**

24: **B**

25: **A**

26: **D**

27: **B**

28: **A**

29: **A**

30: **D**

31: **B**

32: **D**

33: **D**

34: **C**

35: **A**

36: **D**

37: **C**

38: **A**

39: **C**

40: **A**

41: **B**

42: **A**

43: **D**

44: **D**

45: **B**

46: **C**

47: **D**

48: **C**

49: **D**

50: **D**

51: **A**

52: **C**

53: **C**

54: **C**

55: **D**

56: **C**

57: **C**

58: **A**

59: **B**

60: **D**

61: **A**

62: **B**

63: **B**

64: **A**

65: **D**

66: **A**

67: **B**

68: **D**

69: **B**

70: **A**

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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: _____		