

Exam simulation

Quiz BPL Gas - Balloon Pilot License - Principles of Flight (Balloon)



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STUDENT NAME:

DATE AND TIME:

01. Wake turbulence is caused by...

- a) Wind shear at the wingtip of an aerofoil
- b) Jet blast behind a turbine engine
- c) Turbulence at the downwind side of a mountain range
- d) Pressure compensation at the wingtip of an aerofoil

02. 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

03. The term "runway" is defined as a...

- a) Rectangular area on a land or water aerodrome prepared for the landing and take-off of aircraft
- b) Rectangular area on a land aerodrome prepared for the landing and take-off of helicopters
- c) Round area on an aerodrome prepared for the landing and take-off of aircraft
- d) Rectangular area on a land aerodrome prepared for the landing and take-off of aircraft

04. For what approximate time period can the short-time memory store information?

- a) 10 to 20 seconds
- b) 3 to 7 seconds
- c) 30 to 40 seconds
- d) 35 to 50 seconds

05. What is the primary purpose of an aircraft accident investigation?

- a) To determine the guilty party and draw legal consequences
- b) To identify the reasons and work out safety recommendations
- c) To clarify questions of liability within the meaning of compensation for passengers
- d) To work for the public prosecutor and help to follow-up flight accidents

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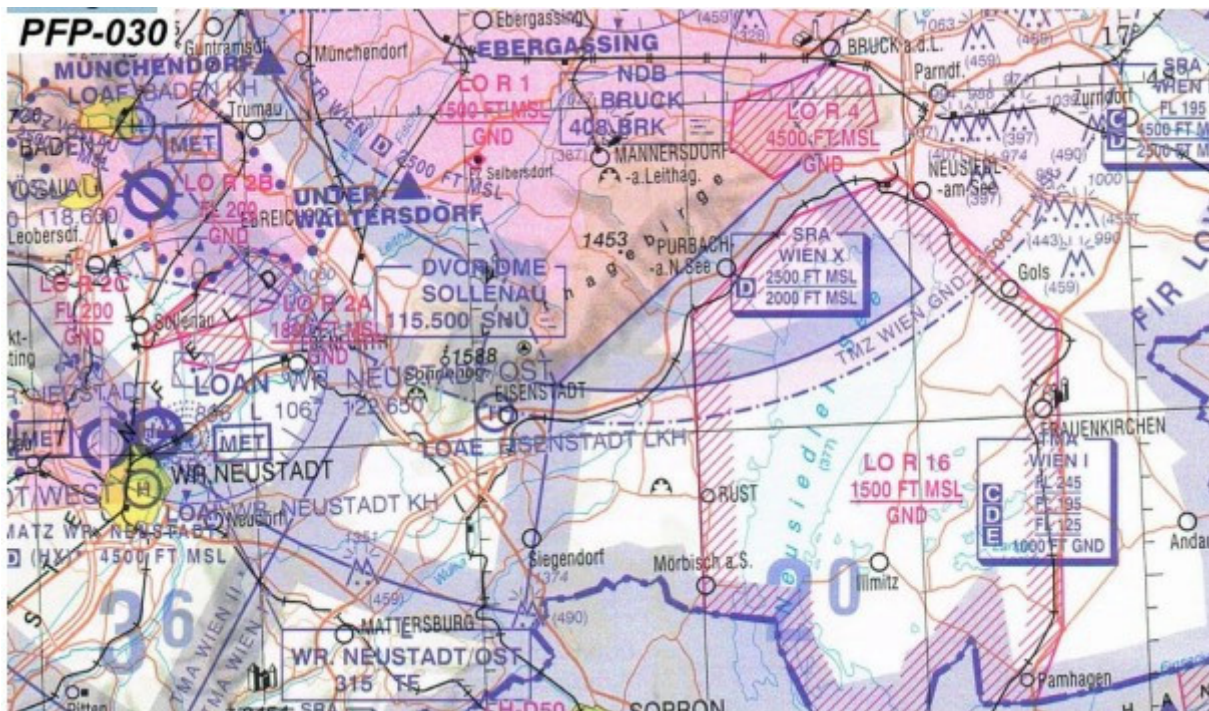
06. Which of the following factors affects the reception of VHF transmissions?

- a) Altitude
- b) Twilight error
- c) Shoreline effect
- d) Height of ionosphere

07. 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

08. The upper limit of LO R 4 equals... See annex (PPF-030)



- a) 1500 ft MSL
- b) 1500 ft AGL
- c) 4500 ft MSL
- d) 4500 ft AGL

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09. What are the air masses that Central Europe is mainly influenced by?

- a) Equatorial and tropical warm air
- b) Polar cold air and tropical warm air
- c) Tropical and arctic cold air
- d) Arctic and polar cold air

10. Which of the following qualities are influenced by stress? 1. Attention 2. Concentration 3. Responsiveness 4. Memory

- a) 2, 4
- b) 1
- c) 1, 2, 3, 4
- d) 1, 2, 3

11. The term 'isogonal' or 'isogonic line' is defined as a line on an aeronautical chart, connecting all points with the same value of...

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

12. A flight level is a...

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

13. 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

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14. 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

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

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

16. 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 remaining distance of 18 NM?

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

17. 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

18. The rotational axis of the Earth runs through the...

- a) Geographic North Pole and on the geographic South Pole
- b) Magnetic north pole and on the magnetic south pole
- c) Geographic North Pole and on the magnetic south pole
- d) Magnetic north pole and on the geographic South Pole

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19. What visual flight conditions can be expected within the warm sector of a polar front low during summer time?

- a) Visibility less than 1000 m, cloud-covered ground
- b) Moderate to good visibility, scattered clouds
- c) Moderate visibility, heavy showers and thunderstorms
- d) Good visibility, some isolated high clouds

20. 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

21. 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

22. Mountain side updrafts can be intensified by ...

- a) Solar irradiation on the lee side
- b) Thermal radiation of the windward side during the night
- c) Solar irradiation on the windward side
- d) Warming of upper atmospheric layers

23. 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

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24. What type of turbulence is typically found close to the ground on the lee side during Foehn conditions?

- a) Clear-air turbulence (CAT)
- b) Turbulence in rotors
- c) Inversion turbulence
- d) Thermal turbulence

25. 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

26. 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

27. Which instrument can be affected by the hysteresis error?

- a) Tachometer
- b) Altimeter
- c) Vertical speed indicator
- d) Direct reading compass

28. 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

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29. Urgency messages are defined as...

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

30. 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

31. What is the meaning of the abbreviation "SERA"?

- a) Selective Radar Altimeter
- b) Standard European Routes of the Air
- c) Specialized Radar Approach
- d) Standardized European Rules of the Air

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

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

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

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

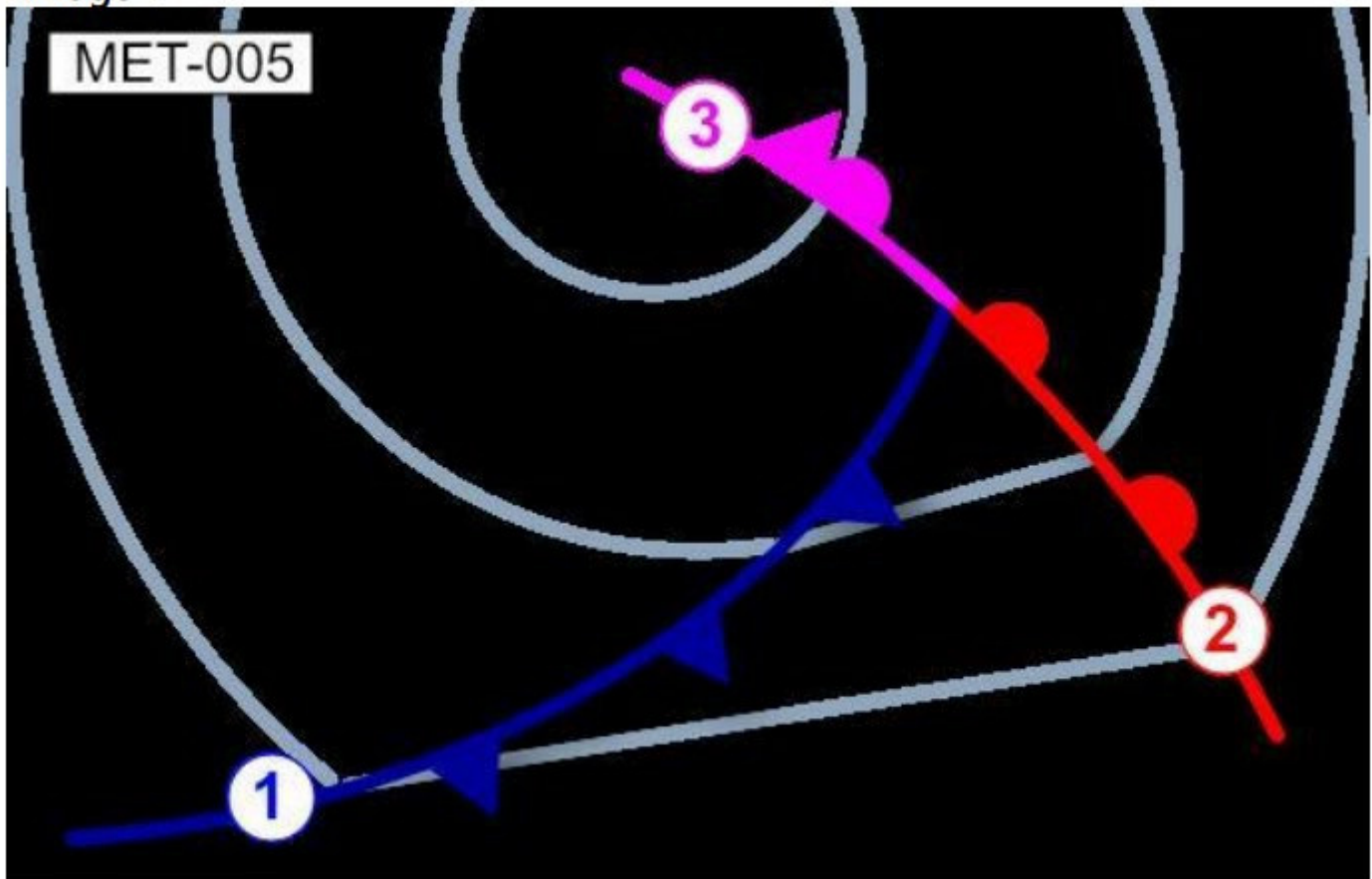
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34. The symbol labeled (3) as shown in the picture is a / an... See figure (MET-005)



- a) Occlusion
- b) Cold front
- c) Warm front
- d) Front aloft

35. How can the vents be checked before take-off with a gas balloon?

- a) Connecting the filling nozzle with the static line loop
- b) Strongly shaking the vent rope
- c) Perform a valve slide
- d) Check if the ropes are clear and working

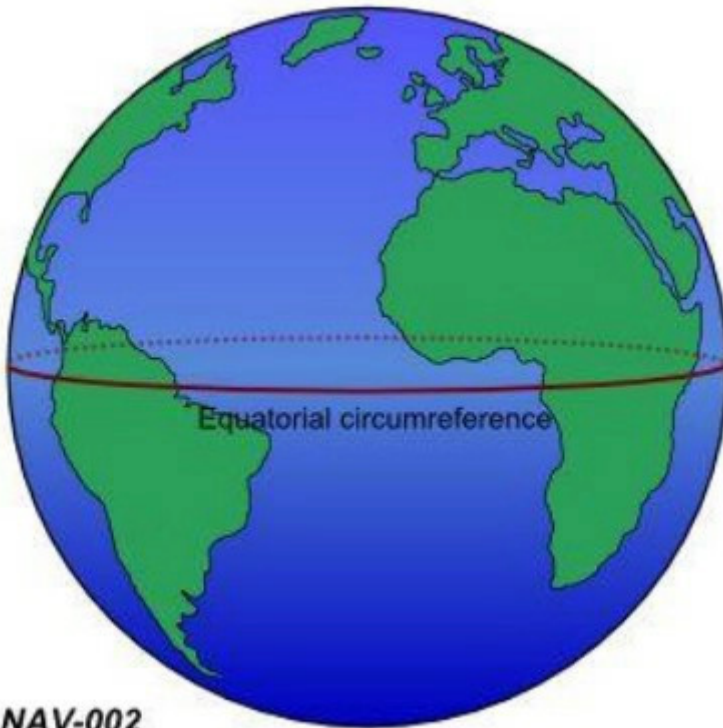
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36. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



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

37. Which transponder code indicates a radio failure?

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

38. 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

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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. 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

41. 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

42. What is the minimum flight visibility in airspace "C" for an aircraft operating under VFR at FL125?

- a) 5000 m
- b) 3000 m
- c) 8000 m
- d) 1500 m

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

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

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44. What is the call sign of the aerodrome control?

- a) Ground
- b) Tower
- c) Airfield
- d) Control

45. With other factors remaining constant, decreasing temperature results in...

- a) Decreasing spread and decreasing relative humidity
- b) Decreasing spread and increasing relative humidity
- c) Increasing spread and decreasing relative humidity
- d) Increasing spread and increasing relative humidity

46. What chart shows areas of precipitation?

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

47. 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

48. How should a landing of a gas balloon be conducted at strong winds?

- a) Drop tow; in sufficient height activate rip panel
- b) Activate rip panel without throwing tow
- c) Drop tow; activate rip panel after ground contact
- d) Drop tow; conduct landing with use of valve

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49. What must be considered for cross-border flights?

- a) Transmission of hazard reports
- b) Approved exceptions
- c) Regular location messages
- d) Requires flight plans

50. 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 %

51. 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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52. (For this question, please use annex PFP-063) According ICAO, what symbol indicates a general spot elevation?

- A 300
- B (300)
- C •1737
- D •1737

PFP-063

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

53. What does the abbreviation "H24" stand for?

- a) 24 h service
- b) No specific opening times
- c) Sunrise to sunset
- d) Sunset to sunrise

54. 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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55. 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

56. 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

57. 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

58. How can expanding filling gas be released in case the filling port of a gas balloon cannot be opened during cruise?

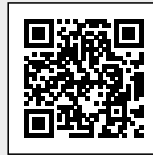
- a) By activating the pull rope
- b) Through the emergency opening
- c) By releasing the filling port cables
- d) By turning the Poeschelring

59. 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

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60. Point A on the Earth's surface lies exactly on the parallel of latitude of 47°50'27"N. Which point is exactly 240 NM north of A?

- a) 53°50'27"N
- b) 49°50'27"N
- c) 43°50'27"N
- d) 51°50'27"N

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 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

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. 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

64. What wind conditions can be expected in areas showing large distances between isobars?

- a) Formation of local wind systems with strong prevailing westerly winds
- b) Strong prevailing westerly winds with rapid veering
- c) Variable winds, formation of local wind systems
- d) Strong prevailing easterly winds with rapid backing

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65. 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%

66. What conditions are mandatory for the formation of thermal thunderstorms?

- a) Absolutely stable atmosphere, high temperature and high humidity
- b) Absolutely stable atmosphere, high temperature and low humidity
- c) Conditionally unstable atmosphere, high temperature and high humidity
- d) Conditionally unstable atmosphere, low temperature and low humidity

67. What is the correct way of acknowledging the instruction "Squawk 4321, Call Bremen Radar on 131.325"?

- a) Roger
- b) Squawk 4321, wilco
- c) Squawk 4321, 131.325
- d) Wilco

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

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

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

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

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70. 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

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Response Scheme

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

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