

Exam simulation

Exam BPL Gas - Balloon Pilot License - Meteorology



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STUDENT NAME:

DATE AND TIME:

01. The term 'civil twilight' is defined as...

- a) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the true horizon
- b) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the apparent horizon
- c) The period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the true horizon
- d) The period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the apparent horizon

02. 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

03. 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 increasing temperature and constant volume
- c) The density decreases with increasing temperature and constant pressure
- d) The density decreases with decreasing volume and constant temperature

04. An ATIS is valid for...

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

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05. 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

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

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

07. What change of wind direction can be expected during the passage of a polar front low in Central Europe?

- a) Backing wind during passage of the warm front, veering wind during passage of the cold front
- b) Backing wind during passage of the warm front, backing wind during passage of the cold front
- c) Veering wind during passage of the warm front, backing wind during passage of the cold front
- d) Veering wind during passage of the warm front, veering wind during passage of the cold front

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

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

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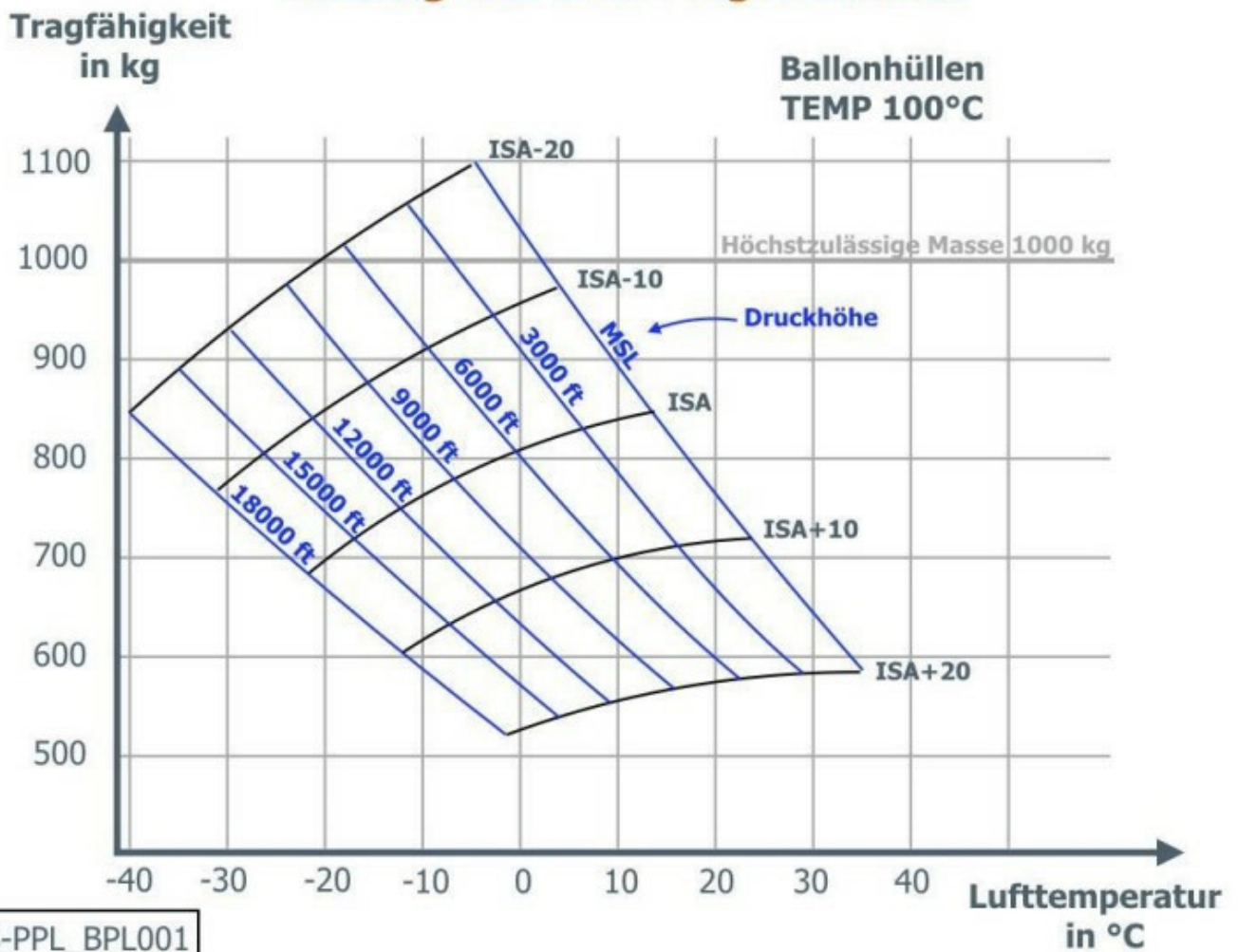
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09. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming temperature ISA+10, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to 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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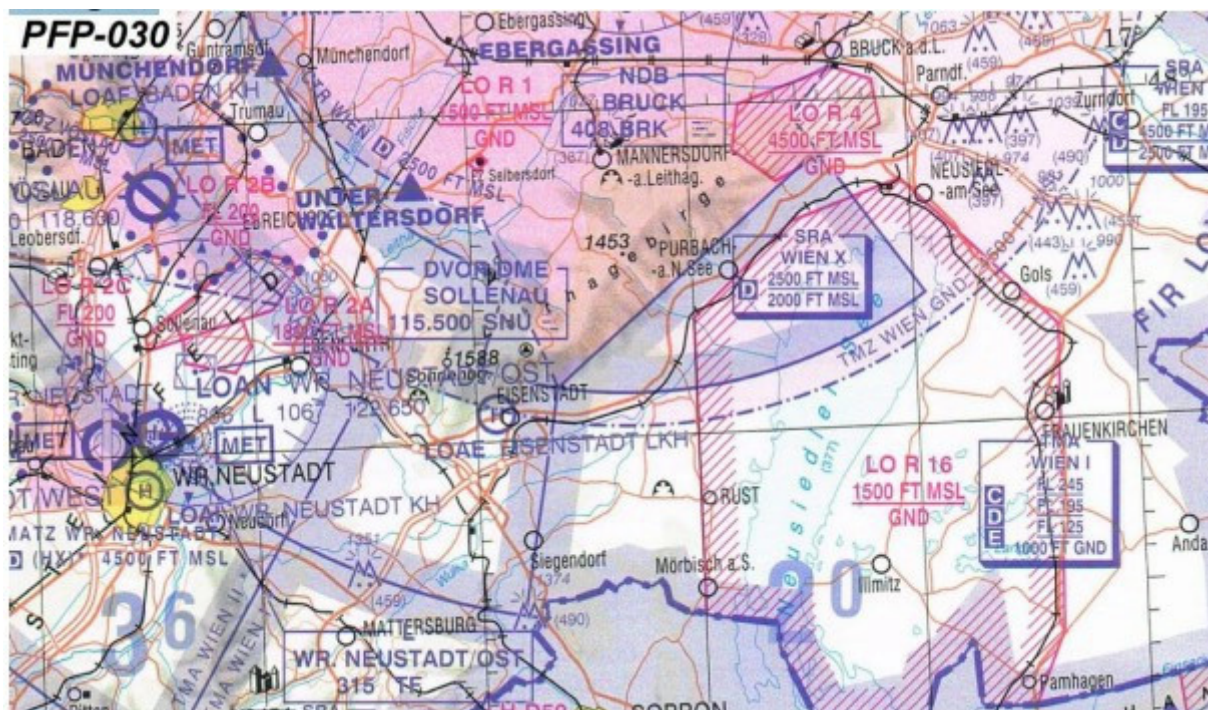
10. What has to be considered before a balloon ride across water surfaces?

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

11. During a flight at FL 80, the altimeter setting has to be...

- a) Local QFE
- b) 1013.25 hPa
- c) 1030.25 hPa
- d) Local QNH

12. The upper limit of LO R 4 equals... See annex (PFP-030)



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

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13. Electronic devices on board of an aeroplane have influence on the...

- a) Direct reading compass
- b) Artificial horizon
- c) Airspeed indicator
- d) Turn coordinator

14. 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

15. With regard to thunderstorms, strong up- and downdrafts appear during the...

- a) Mature stage
- b) Dissipating stage
- c) Thunderstorm stage
- d) Initial stage

16. 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

17. What is the call sign of the surface movement control?

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

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

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

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

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

20. 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

21. What technical measure provides electric conductivity to the hull ropes of a web-less gas balloon?

- a) Wrapping with plastic tape
- b) A surface painting
- c) Impregnation of the ropes
- d) Embedded steel threads (filaments)

22. 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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23. 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

24. During a flight, a flight plan can be filed at the...

- a) Search and Rescue Service (SAR)
- b) Next airport operator en-route
- c) Flight Information Service (FIS)
- d) Aeronautical Information Service (AIS)

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. 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

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

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

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28. 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

29. Which are the official basic units for horizontal distances used in aeronautical navigation and their abbreviations?

- a) Feet (ft), inches (in)
- b) Yards (yd), meters (m)
- c) Nautical miles (NM), kilometers (km)
- d) Land miles (SM), sea miles (NM)

30. The distance between two airports is 220 NM. On an aeronautical navigation chart the pilot measures 40.7 cm for this distance. The chart scale is...

- a) 1 : 2000000
- b) 1 : 1000000
- c) 1 : 500000
- d) 1 : 250000

31. What does a readability of 1 indicate?

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

32. 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

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33. What cloud type does the picture show? See figure (MET-004).



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

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

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

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35. 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

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

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

37. Which information from a ground station does not require readback?

- a) SSR-Code
- b) Wind
- c) Altitude
- d) Runway in use

38. 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

39. 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

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40. QFE is the...

- a) Altitude above the reference pressure level 1013.25 hPa
- b) Magnetic bearing to a station
- c) Barometric pressure adjusted to sea level, using the international standard atmosphere (ISA)
- d) Barometric pressure at a reference datum, typically the runway threshold of an airfield

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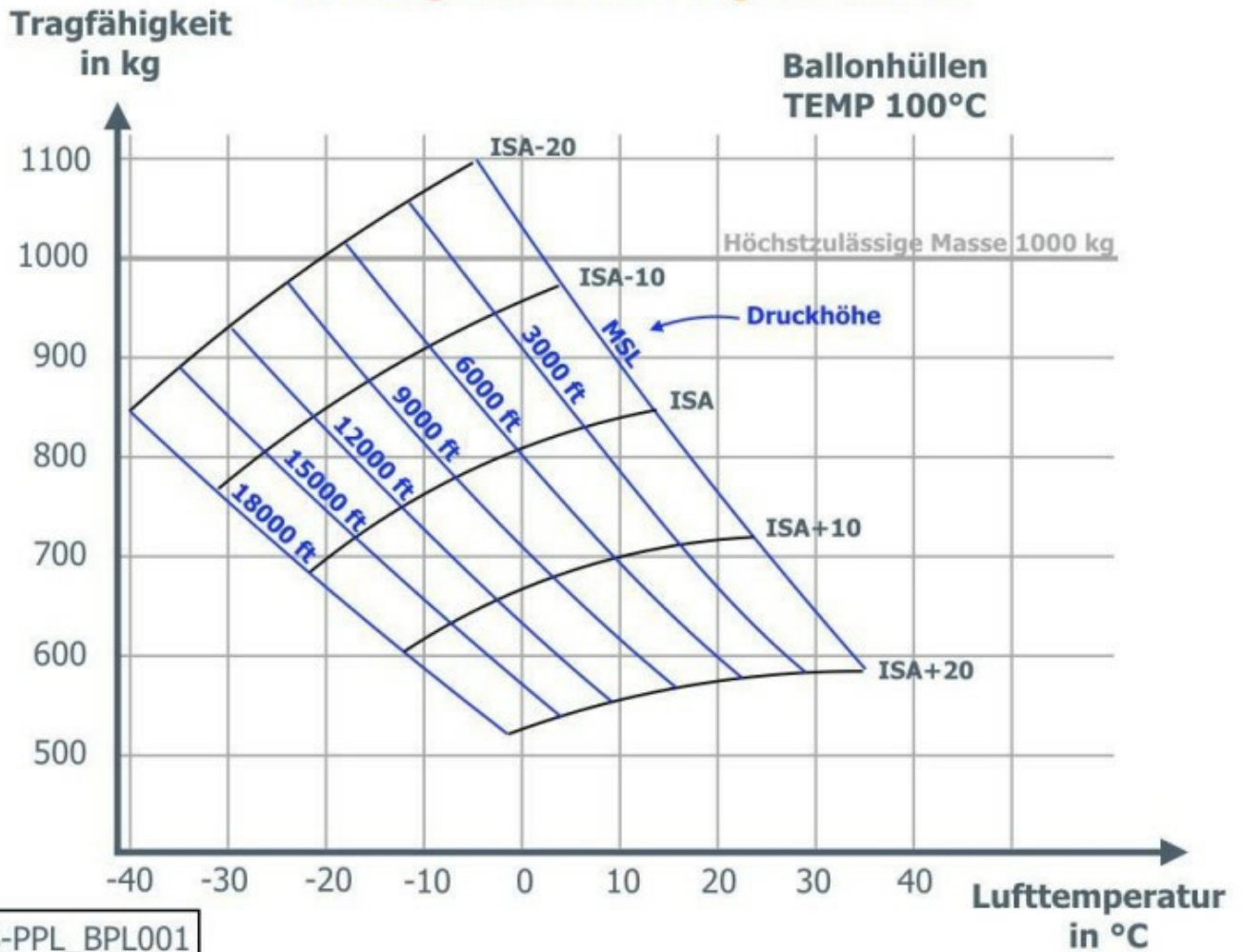
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41. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming ISA temperatures, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 9.000 ft ? (use attachment ECQB-PPL_BPL001)

Auszug aus dem Flughandbuch



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

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42. What has to be expected by the balloon pilot during descent in deeply cooled layers close to the ground?

- a) Floating on top of the cold air layer
- b) Sudden change in airspeed
- c) Balloon starts to climb
- d) Increasing descent while entering to ground layers

43. During a flight in colder-than-ISA air the indicated altitude is...

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

44. 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

45. 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%

46. What is the meaning of the abbreviation "ARC"?

- a) Airspace Restriction Criteria
- b) Airworthiness Recurring Control
- c) Airworthiness Review Certificate
- d) Airspace Rulemaking Committee

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47. 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

48. (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

49. 1000 ft equal...

- a) 3000 m
- b) 300 m
- c) 30 km
- d) 30 m

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50. 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

51. What is the difference in time when the sun moves 10° of longitude?

- a) 0:04 h
- b) 0:40 h
- c) 0:30 h
- d) 1:00 h

52. What is the minimum flight visibility in airspace "E" for an aircraft operating under VFR at FL75?

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

53. 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

54. 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

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55. Under what conditions may class D airspace be entered with a radio failure?

- a) It is the destination aerodrome
- b) Approval has been granted before
- c) It is the aerodrome of departure
- d) There are other aircraft in the aerodrome circuit

56. A gas balloon has to be equipped with which tethers?

- a) 1 at 40 m or 4 at 10 m
- b) 1 at 30 m or 3 at 10 m
- c) 2 at 10 m or 1 at 20 m
- d) 2 at 20 m or 1 at 10 m

57. 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

58. 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

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59. 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

60. Which transponder code should be set during a radio failure without any request?

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

61. 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

62. 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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63. How does a gas react when released from a pressurized container?

- a) The gas heats adiabatically due to expansion
- b) The gas cools adiabatically due to expansion
- c) The gas condenses inside the envelope
- d) The gas cools due to thermal contact with environmental air

64. The correct transponder code for emergencies is...

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

65. 5500 m equal...

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

66. What is the status of the rules and procedures created by the EASA? (e.g. Part-SFCL, Part-MED)

- a) They have the same status as ICAO Annexes
- b) They are not legally binding, they only serve as a guide
- c) They are part of the EU regulation and legally binding to all EU member states
- d) Only after a ratification by individual EU member states they are legally binding

67. 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

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68. 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

69. 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

70. 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

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Response Scheme

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

01: **C**

02: **B**

03: **C**

04: **B**

05: **C**

06: **A**

07: **D**

08: **A**

09: **A**

10: **B**

11: **B**

12: **C**

13: **A**

14: **D**

15: **A**

16: **B**

17: **B**

18: **D**

19: **D**

20: **A**

21: **D**

22: **A**

23: **D**

24: **C**

25: **C**

26: **C**

27: **D**

28: **C**

29: **C**

30: **B**

31: **D**

32: **B**

33: **A**

34: **C**

35: **B**

36: **B**

37: **B**

38: **C**

39: **A**

40: **D**

41: **A**

42: **A**

43: **A**

44: **D**

45: **B**

46: **C**

47: **D**

48: **D**

49: **B**

50: **D**

51: **B**

52: **D**

53: **C**

54: **D**

55: **B**

56: **C**

57: **A**

58: **B**

59: **D**

60: **D**

61: **D**

62: **D**

63: **B**

64: **D**

65: **B**

66: **C**

67: **B**

68: **D**

69: **C**

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: _____		