

# Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Flight Performance and Planning



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STUDENT NAME:

DATE AND TIME:

**01. 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

**02. 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)

**03. 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)

**04. What is the best combination of traits with respect to the individual attitude and behaviour for a pilot?**

- a) Extroverted - stable
- b) Introverted - unstable
- c) Introverted - stable
- d) Extroverted - unstable

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## 05. What weather development will result from convergence at ground level?

- a) Ascending air and cloud formation
- b) Ascending air and cloud dissipation
- c) Descending air and cloud formation
- d) Descending air and cloud dissipation

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## 06. With respect to aircraft accident and incident investigation, what are the three categories regarding aircraft occurrences?

- a) Incident Serious incident Accident
- b) Event Serious event Accident
- c) Happening Event Serious event
- d) Event Crash Disaster

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## 07. 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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## 08. What process results in the formation of "advection fog"?

- a) Warm, moist air is moved across cold ground areas
- b) Cold, moist air is being moved across warm ground areas
- c) Prolonged radiation during nights clear of clouds
- d) Cold, moist air mixes with warm, moist air

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

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

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## 10. What factor may affect the top of cumulus clouds?

- a) The spread
- b) Relative humidity
- c) The absolute humidity
- d) The presence of an inversion layer

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## 11. A pilot can contact FIS (flight information service)...

- a) Via internet.
- b) Via radio communication.
- c) By a personal visit.
- d) Via telephone.

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## 12. 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.

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## 13. Which of the following statements is correct?

- a) At higher altitude, sink rate in case of cooling is increased due to less drag by less density.
- b) At higher altitude, sink rate by cooling is not increased because due to low density the mass inside the hull is also less.
- c) Higher drag at higher altitude prevents increased sink rate in case of cooling.
- d) Maximum sink rate must be equal at all altitudes as prescribed by design regulations.

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## 14. 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)

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**15. At which altitude is the atmospheric pressure approximately half the MSL value (1013 hPa)?**

- a) 5000 ft
- b) 18000 ft
- c) 22000 ft
- d) 10000 ft

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**16. A true altitude is...**

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

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**17. A wind shear is...**

- a) A meteorological downslope wind phenomenon in the alps.
- b) A wind speed change of more than 15 kt.
- c) A vertical or horizontal change of wind speed and wind direction.
- d) A slow increase of the wind speed in altitudes above 13000 ft.

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**18. What is the correct way of acknowledging the instruction "DZF after lift-off climb straight ahead until 2500 feet before turning right heading 220 degrees, wind 090 degrees, 5 knots, runway 12, cleared for take-off"?**

- a) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, runway 12, cleared for take-off
- b) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, 090 degrees, 5 knots, cleared for take-off
- c) DZF after lift-off climb straight ahead 2500 feet, wilco, heading 220 degrees, 090 degrees, 5 knots, cleared for take-off
- d) DZF after lift-off climb straight ahead 2500 feet, then turn right heading 220, 090 degrees, 5 knots

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**19. Aerostatic lift, amongst other factors, depends on...**

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

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

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## 21. Wake turbulence is caused by...

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

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## 22. 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.

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## 23. What is the percentage of nitrogen in the atmosphere?

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

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## 24. 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

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## 25. 5500 m equal...

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

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## 26. The average decrease of blood alcohol level for an adult in one hour is approximately...

- a) 0.3 percent.
- b) 0.03 percent.
- c) 0.01 percent
- d) 0.1 percent.

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## 27. 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

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## 28. What is the correct way of establishing radio communication between D-EAZF and Dusseldorf Tower?

- a) Dusseldorf Tower over
- b) D-EAZF is calling Dusseldorf Tower
- c) Tower from D-EAZF
- d) Dusseldorf Tower D-EAZF

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## 29. The pressure at MSL in ISA conditions is...

- a) 1013.25 hPa.
- b) 113.25 hPa.
- c) 1123 hPa
- d) 15 hPa.

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## 30. The aerostatic lift corresponds to which force?

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

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## 31. 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

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## 32. 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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## 33. The carrying ropes of a hot-air balloon are made up from:

- a) Manila rope
- b) Stainless steel
- c) Copper
- d) Duralum

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## 34. Measured pressure distribution in MSL and corresponding frontal systems are displayed by the...

- a) Significant Weather Chart (SWC)
- b) Prognostic chart
- c) Surface weather chart.
- d) Hypsometric chart.

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**35. 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.

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**36. Which abbreviation is used for the term "visual flight rules"?**

- a) VFS
- b) VRU
- c) VMC
- d) VFR

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**37. Times are transmitted as...**

- a) Standard time.
- b) Time zone time.
- c) Local time.
- d) UTC.

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**38. Which of the following options states a correct position report?**

- a) DEABC over "N" in FL 2500 ft
- b) DEABC over "N" at 35
- c) DEABC, "N", 2500 ft
- d) DEABC reaching "N"

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**39. 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.

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## 40. 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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## 41. 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

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## 42. 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.

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## 43. 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.

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## 44. The dynamic lift created by airflow across the top of the envelope of a balloon on the ground is referred to as?

- a) Lower lift
- b) Upper lift
- c) False lift
- d) Anti-ballast

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**45. 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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**46. The vertical speed indicator measures the difference of pressure between...**

- a) The present dynamic pressure and the static 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 dynamic pressure of a previous moment.
- d) The present static pressure and the static pressure of a previous moment.

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**47. What is the great circle distance between two points A and B on the equator when the difference between the two associated meridians is exactly one degree of longitude?**

- a) 60 NM
- b) 216 NM
- c) 400 NM
- d) 120 NM

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**48. What is the distance between the two parallels of longitude 150°E and 151°E along the equator?**

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

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**49. 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 tousand decimal five zero.
- d) One one niner decimal five zero zero.

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50. The circumference of the Earth at the equator is approximately... See figure (NAV-002) Siehe Anlage 1



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

51. The barometric altimeter indicates height above...

- a) Mean sea level.
- b) Ground.
- c) A selected reference pressure level.
- d) Standard pressure 1013.25 hPa.

52. 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) Approximatley 2.5 m/s
- b) Approximatley 4.5 m/s
- c) Approximatley 6.5 m/s
- d) Approximatley 2.5 m/s

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**53. Which wind system may be dangerous for balloon rides in the Alps?**

- a) Bora
- b) Scirocco
- c) Mistra
- d) Foehn

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

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

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**55. Which of the gases stated below is NOT made up from hydrocarbons?**

- a) Propane
- b) Butane
- c) Methane
- d) Hydrogen

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**56. What must be considered for cross-border flights?**

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

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**57. What has to be expected when diving into an inversion layer from above?**

- a) Rate of descent increases
- b) Rate of descent decreases.
- c) Sudden drop onto the ground.
- d) Uncontrollable oscillation of the basket.

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

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- 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

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**59. Which dangerous attitudes are often combined?**

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

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

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

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**61. Wake turbulence is particularly strong...**

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

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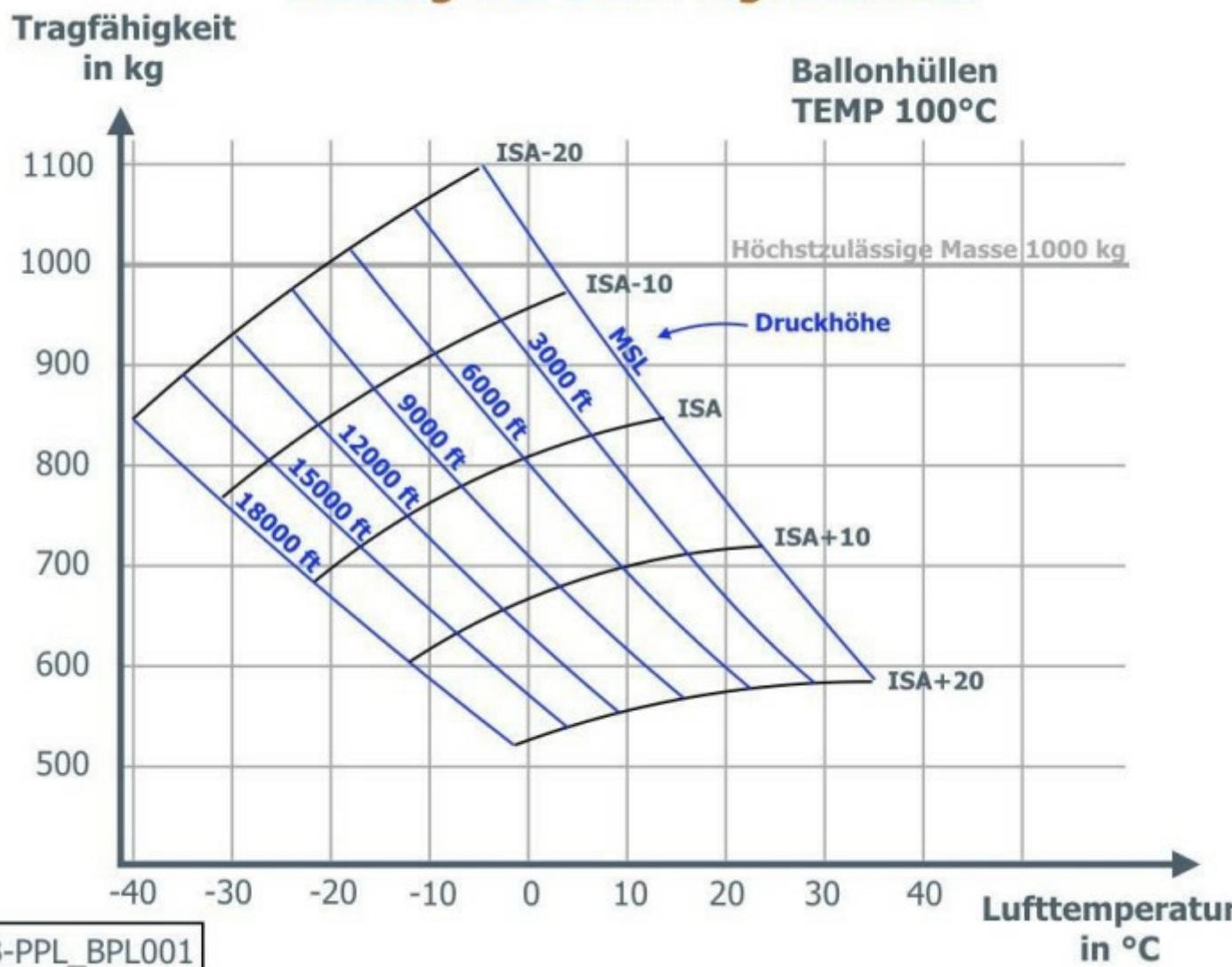
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62. Given the following masses: Empty mass 260 kg Instruments 20 kg per gas container (full): 30 kg per person: 80 kg Assuming temperature ISA+10, how many persons may be carried in the basket at maximum, if the balloon with 4 gas containers has to climb up to pressure altitude 12.000 ft ? (use attachment ECQB-PPL\_BPL001) Siehe Anlage 1

## Auszug aus dem Flughandbuch



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

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**63. 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

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**64. 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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**65. A vertical speed indicator connected to a too big equalizing tank results in...**

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

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**66. The hull load of a hot-air balloon is carried by ...**

- a) By the towing ropes
- b) By the top ropes.
- c) The carrying ropes
- d) The fixing ropes.

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**67. 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.

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**68. At which conditions does the arm blower have the highest efficiency?**

- a) With as small distance to the balloon opening as possible.
- b) By evenly swiveling for better air spreading.
- c) By completely filling the balloon opening with the air beam.
- d) By placing the blower inside the hull.

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**69. From which altitude on does the body usually react to the decreasing atmospheric pressure?**

- a) 7000 feet
- b) 12000 feet
- c) 2000 feet
- d) 10000 feet

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**70. 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

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## Response Scheme

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

01: A

02: C

03: C

04: A

05: A

06: A

07: D

08: A

09: D

10: D

11: B

12: A

13: A

14: A

15: B

16: A

17: C

18: A

19: D

20: A

21: B

22: C

23: C

24: B

25: B

26: C

27: D

28: D

29: A

30: C

31: A

32: A

33: B

34: C

35: B

36: D

37: D

38: C

39: B

40: B

41: D

42: D

43: D

44: C

45: C

46: D

47: A

48: A

49: A

50: D

51: C

52: C

53: D

54: D

55: D

56: D

57: B

58: C

59: B

60: A

61: C

62: A

63: C

64: C

65: A

66: C

67: D

68: C

69: A

70: D

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## Response form

Use this form to mark your answers

01: \_\_\_\_\_

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