

# Exam simulation

Quiz BPL Gas - Balloon Pilot License - Air Law



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STUDENT NAME:

DATE AND TIME:

## 01. 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

## 02. (For this question, please use annex PFP-062) According ICAO, what symbol indicates a civil airport (not international airport) with paved runway?

- A 
- B 
- C 
- D 

PFP-062

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

## 03. 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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## 04. 5500 m equal...

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

## 05. A risk factor for decompression sickness is...

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

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

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

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

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

## 08. What effect has air temperature on the carrying force and on maximum take-off mass of a balloon?

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- 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

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## 09. What weather conditions can be expected in high pressure areas during winter?

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- a) Squall lines and thunderstorms
- b) Changing weather with passing of frontal lines
- c) Calm winds and widespread areas with high fog
- d) Calm weather and cloud dissipation, few high Cu

## 10. What effect can sudden insolation from sunlight have on a gas balloon?

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- a) The height at maximum differential pressure decreases
- b) The height at maximum differential pressure increases
- c) The hull pressure decreases
- d) A sudden increase in rate of descent

## 11. With regard to global circulation within the atmosphere, where does polar cold air meet subtropical warm air?

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- a) At the subtropical high pressure belt
- b) At the equator
- c) At the polar front
- d) At the geographic poles

## 12. The measurement of altitude is based on the change of the...

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

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

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

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

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

**15. Which of the following symptoms may indicate hypoxia?**

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- 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

**16. What is meant by "isothermal layer"?**

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- a) A boundary area between two other layers within the atmosphere
- b) An atmospheric layer where temperature decreases with increasing height
- c) An atmospheric layer where temperature increases with increasing height
- d) An atmospheric layer with constant temperature with increasing height

**17. Carbon monoxide poisoning can be caused by...**

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- a) Unhealthy food
- b) Alcohol
- c) Smoking
- d) Little sleep

**18. What is the meaning of an area marked as "TMZ"?**

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- a) Touring Motorglider Zone
- b) Traffic Management Zone
- c) Transponder Mandatory Zone
- d) Transportation Management Zone

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

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

## 20. A balloon pilot decides to use one or more separate gas containers for initial heating during buildup. To ensure a safe buildup ...

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- a) To expedite take-off, the gas containers have to be stored outside
- b) No separate gas containers are allowed during buildup
- c) The gas containers have to be fixed safely inside the basket
- d) Two gas containers (one inside, one outside) are to be used

## 21. Where does the inclination reach its lowest value?

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- a) At the geographic equator
- b) At the magnetic poles
- c) At the magnetic equator
- d) At the geographic poles

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

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- 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

## 23. 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?

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- 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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## 24. What statement is correct with regard to change in temperature?

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- 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

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

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

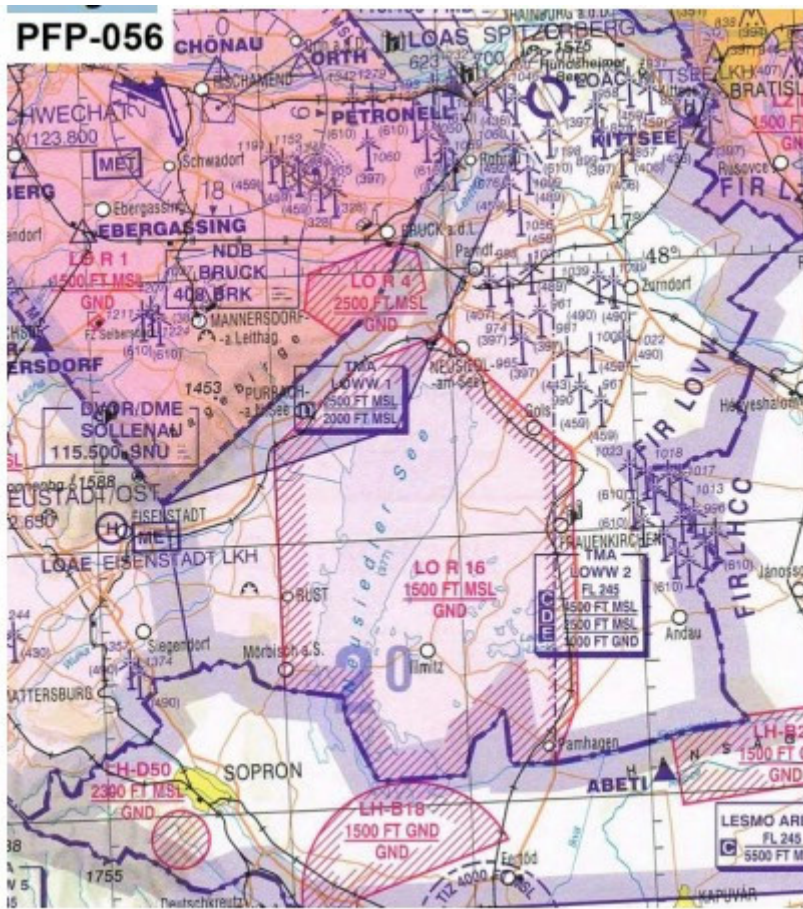
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## 26. The upper limit of LO R 16 equals... See annex (PFP-056)



- a) FL150
- b) 1500 ft GND
- c) 1500 ft MSL
- d) 1500 m MSL

## 27. Visual illusions are mostly caused by...

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

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## 28. How do spread and relative humidity change with increasing temperature?

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- a) Spread increases, relative humidity increases
- b) Spread remains constant, relative humidity increases
- c) Spread remains constant, relative humidity decreases
- d) Spread increases, relative humidity decreases

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

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

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

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- 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

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

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- 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

## 32. What is the purpose of "interception lines" in visual navigation?

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- a) They are used as easily recognizable guidance upon a possible loss of orientation
- b) To visualize the range limitation from the departure aerodrome
- c) They help to continue the flight when flight visibility drops below VFR minima
- d) To mark the next available en-route airport during the flight

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**33. In which situation is it NOT possible to achieve a pressure compensation between the middle ear and the environment?**

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- 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

**34. Assume two arbitrary points A and B on the same parallel of latitude, but not on the equator. Point A is located on 010°E and point B on 020°E. The rhumb line distance between A and B is always...**

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- a) More than 300 NM
- b) Less than 300 NM
- c) Less than 600 NM
- d) More than 600 NM

**35. Which are the properties of a Mercator chart?**

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- 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

**36. What ground features should preferably be used for orientation during visual flight?**

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- a) Power lines
- b) Rivers, railroads, highways
- c) Border lines
- d) Farm tracks and creeks

**37. The standard state of gases refers to which temperature?**

---

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

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## 38. What information is provided in the general part (GEN) of the AIP?

---

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

## 39. Which process may result in an inversion layer at about 5000 ft (1500 m) height?

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- a) Intensive sunlight insolation during a warm summer day
- b) Ground cooling by radiation during the night
- c) Advection of cool air in the upper troposphere
- d) Widespread descending air within a high pressure area

## 40. According ISA, what is the density of air at MSL?

---

- a) 1.225 g/m<sup>3</sup>
- b) 1225 kg/m<sup>3</sup>
- c) 1.225 kg/m<sup>3</sup>
- d) 12.25 kg/m<sup>3</sup>

## 41. 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

## 42. A transponder with the ability to send the current pressure level is a...

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- a) Mode C or S transponder
- b) Mode A transponder
- c) Transponder approved for airspace "B"
- d) Pressure-decoder

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## 43. The Empty Mass of a gas balloon includes:

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- 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

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

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

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

---

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

## 46. What change results from an increase in temperature of the carrying gas and of the environmental air at a gas balloon at maximum differential pressure?

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- a) The load capability decreases by 4% per K temperature change
- b) The load capability increases by 4% per K temperature change
- c) The load capability increases by 0.4% per K temperature change
- d) The load capability decreases by 0.4% per K temperature change

## 47. 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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**48. 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?**

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- 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 +-10°
- 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

**49. What is the meaning of the abbreviation "SERA"?**

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

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

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- 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

**51. 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

**52. The altimeter's reference scale is set to airfield pressure (QFE). What indication is shown during the flight?**

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- a) Airfield elevation
- b) Pressure altitude
- c) Altitude above MSL
- d) Height above airfield

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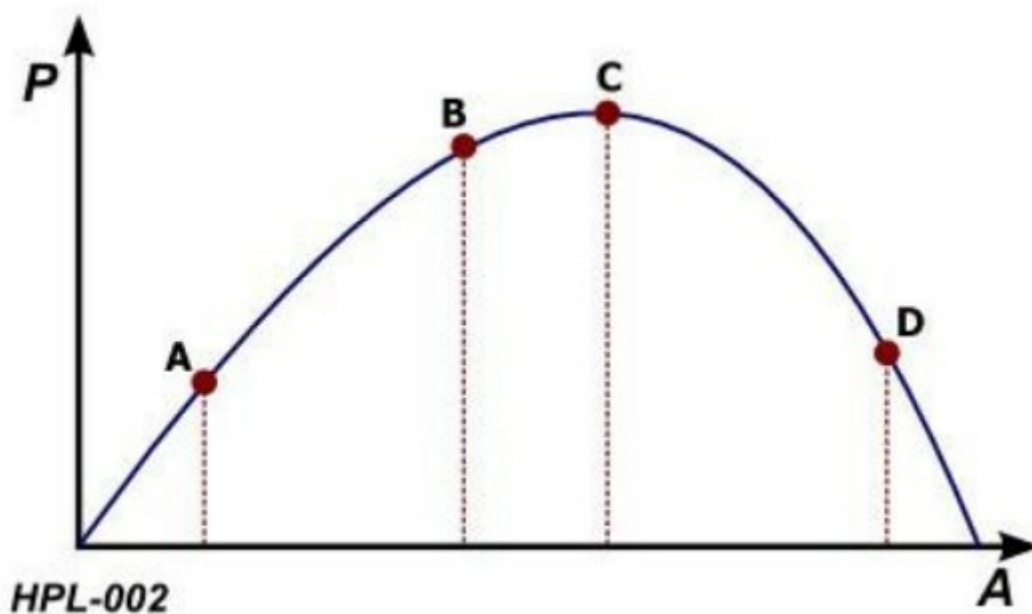


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**53. What difference will be experienced during take-off in presence of a strong surface inversion, compared to a take-off with decreasing temperature with height?**

- a) During climb through an inversion, less ballast must be released and/or less heating is required
- b) During climb through an inversion, less ballast must be released and/or more heating is required
- c) During climb through an inversion, more ballast must be released and/or more heating is required
- d) During climb through an inversion, more ballast must be released and/or less heating is required

**54. 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

**55. 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

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## 56. What is a latent error?

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- a) An error which has an immediate effect on the controls
- b) An error which is made by the pilot actively and consciously
- c) An error which remains undetected in the system for a long time
- d) An error which only has consequences after landing

## 57. The saturated adiabatic lapse rate is...

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- a) Proportional to the dry adiabatic lapse rate
- b) Higher than the dry adiabatic lapse rate
- c) Lower than the dry adiabatic lapse rate
- d) Equal to the dry adiabatic lapse rate

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

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

## 59. A frequency of 119.500 MHz is correctly transmitted as...

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- 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

## 60. The minimum flight visibility at 5000 ft MSL in airspace B for VFR flights is...

---

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

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**61. With Central European Time (CET) given as UTC+1, what UTC time corresponds to 1700 CET?**

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- a) 1600 UTC
- b) 1800 UTC
- c) 1500 UTC
- d) 1700 UTC

**62. What has to be considered before a balloon ride across water surfaces?**

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- 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

**63. 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...**

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

**64. 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

**65. 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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## 66. What is the meaning of the abbreviation "ARC"?

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

## 67. The towing rope of a gas balloon can be found on ...

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- a) The rip panel side
- b) The sandpouner side
- c) The sliding side
- d) The entry side

## 68. How will the sag of the pull rope change during descent?

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- a) It will remain unchanged
- b) It will increase
- c) It will change periodically
- d) It will decrease

## 69. Which statement is correct with regard to the short-term memory?

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- a) It can store 5 ( $\pm 2$ ) items for 1 to 2 minutes
- b) It can store 3 ( $\pm 1$ ) items for 5 to 10 seconds
- c) It can store 7 ( $\pm 2$ ) items for 10 to 20 seconds
- d) It can store 10 ( $\pm 5$ ) items for 30 to 60 seconds

## 70. UTC is...

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- a) A local time in Central Europe
- b) A zonal time
- c) Local mean time at a specific point on Earth
- d) An obligatory time used in aviation

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## Response Scheme

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

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