

# Exam simulation

Exam BPL Gas - Balloon Pilot License - Flight Performance and Planning



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STUDENT NAME:

DATE AND TIME:

**01. What is the distance between the parallels of latitude 48°N and 49°N along a meridian line?**

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- a) 10 NM
- b) 111 NM
- c) 60 NM
- d) 1 NM

**02. 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

**03. Why should balloon pilot or passengers not wear any clothes made of silk or synthetic fibers during ride with a gas balloon?**

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- a) Because of the danger of explosions induced by sparks after electrical discharge
- b) Because these materials may lead to malfunction of some instruments
- c) Because the total mass will be increased beyond the operating limits
- d) Because these materials may lead to noise in radio reception

**04. 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

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**05. What is the correct way of acknowledging "You are now entering airspace Delta"?**

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- a) Entering
- b) Airspace Delta
- c) Wilco
- d) Roger

**06. 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?**

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

**07. What is an indication for a macho attitude?**

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- a) Quick resignation in complex and critical situations
- b) Comprehensive risk assessment when faced with unfamiliar situations
- c) Careful walkaround procedure
- d) Risky flight maneuvers to impress spectators on ground

**08. When air masses meet each other head on, how is this referred to and what air movements will follow?**

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- a) Divergence resulting in air being lifted
- b) Convergence resulting in air being lifted
- c) Convergence resulting in sinking air
- d) Divergence resulting in sinking air

**09. The purpose of the drag lines of the parachute is ...**

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- 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

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

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- 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

## 11. What weather phenomena have to be expected around an upper-level trough?

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- a) Formation of high stratus clouds, ground-covering cloud bases
- b) Calm weather, formation of lifted fog layers
- c) Development of showers and thunderstorms (Cb)
- d) Calm wind, forming of shallow cumulus clouds

## 12. What is the meaning of the phrase "Roger"?

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- a) Permission for proposed action is granted
- b) I understand your message and will comply with it
- c) An error has been made in this transmission. The correct version is...
- d) I have received all of your last transmission

## 13. What effect has the elevation above MSL of an airfield on the carrying force and maximum take-off mass of a balloon?

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- a) The lower the elevation, the lower the maximum take-off mass
- b) The lower the elevation, the greater the carrying force
- c) The lower the elevation, the higher the maximum take-off mass
- d) The higher the elevation, the greater the carrying force

## 14. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are TH and VAR?

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- a) TH: 172°. VAR: 004° E
- b) TH: 194°. VAR: 004° E
- c) TH: 172°. VAR: 004° W
- d) TH: 194°. VAR: 004° W

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**15. 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

**16. What does the abbreviation "H24" stand for?**

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

**17. An aircraft travels 100 km in 56 minutes. The ground speed (GS) equals...**

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- a) 93 kt
- b) 198 kt
- c) 107 km/h
- d) 58 km/h

**18. Which factor can lead to human error?**

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- a) Double check of relevant actions
- b) To be doubtful if something looks unclear or ambiguous
- c) The bias to see what we expect to see
- d) Proper use of checklists

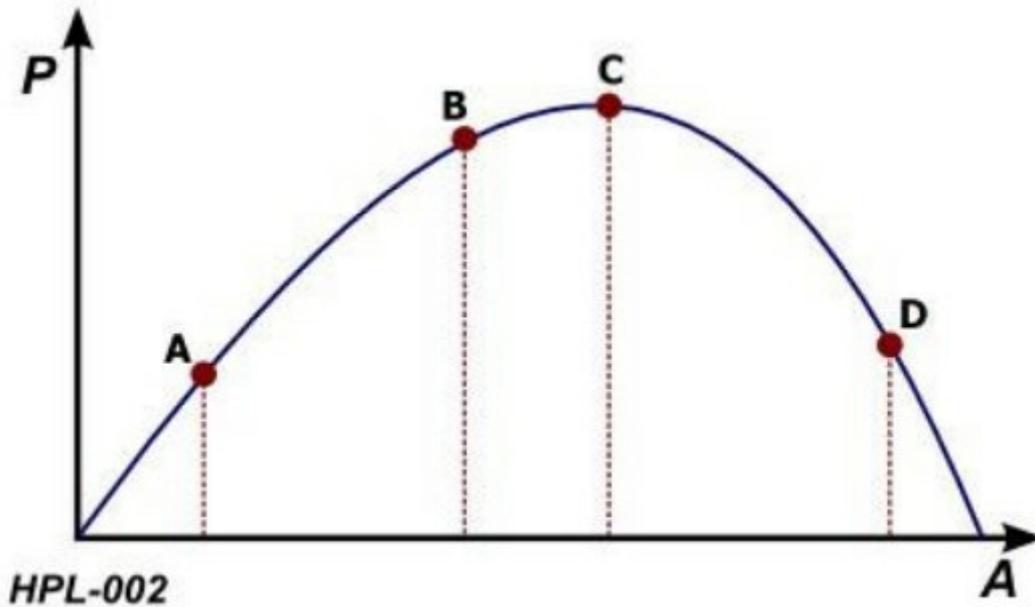
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**19. At which point in the diagram will a pilot find himself to be overstrained? See figure (HPL-002) P = Performance A = Arousal / Stress**



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

**20. 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

**21. 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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## 22. The ongoing process to monitor the current flight situation is called...

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- a) Anticipatory check procedure
- b) Situational thinking
- c) Constant flight check
- d) Situational awareness

## 23. Which instrument can be affected by the hysteresis error?

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

## 24. A wind shear is...

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

## 25. The character of an air mass is given by what properties?

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- a) Wind speed and tropopause height
- b) Environmental lapse rate at origin
- c) Temperatures at origin and present region
- d) Region of origin and track during movement

## 26. 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

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## 27. What phrase is used by a pilot to inform the tower about a go-around?

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- a) Approach canceled
- b) Going around
- c) No landing
- d) Pulling up

## 28. What is the meaning of the abbreviation "TRA"?

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

## 29. 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

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

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

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

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- 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>

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## 32. What is the meaning of the abbreviation "VMC"?

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- a) Variable meteorological conditions
- b) Visual meteorological conditions
- c) Instrument flight conditions
- d) Visual flight rules

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

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

## 34. Moderate to severe turbulence has to be expected...

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- a) On the lee side of a mountain range when rotor clouds are present
- b) Below thick cloud layers on the windward side of a mountain range
- c) With the appearance of extended low stratus clouds (high fog)
- d) Overhead unbroken cloud layers

## 35. What does a cloud coverage of "BKN" mean in a METAR weather report?

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- a) 5 to 7 eighths
- b) 1 to 2 eighths
- c) 8 eighths
- d) 3 to 4 eighths

## 36. The term "static pressure" is defined as pressure...

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- a) Resulting from orderly flow of air particles
- b) Inside the airplane cabin
- c) Sensed by the pitot tube
- d) Of undisturbed airflow

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## 37. Aerostatic lift, amongst other factors, depends on...

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

## 38. 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 %

## 39. 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

## 40. Environmental air temperature and filling gas temperature are the same. Now, the free balloon descends into warmer air. What statement is correct?

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- a) Descent force increases
- b) Descent force decreases
- c) Weight force increases
- d) Weight force decreases

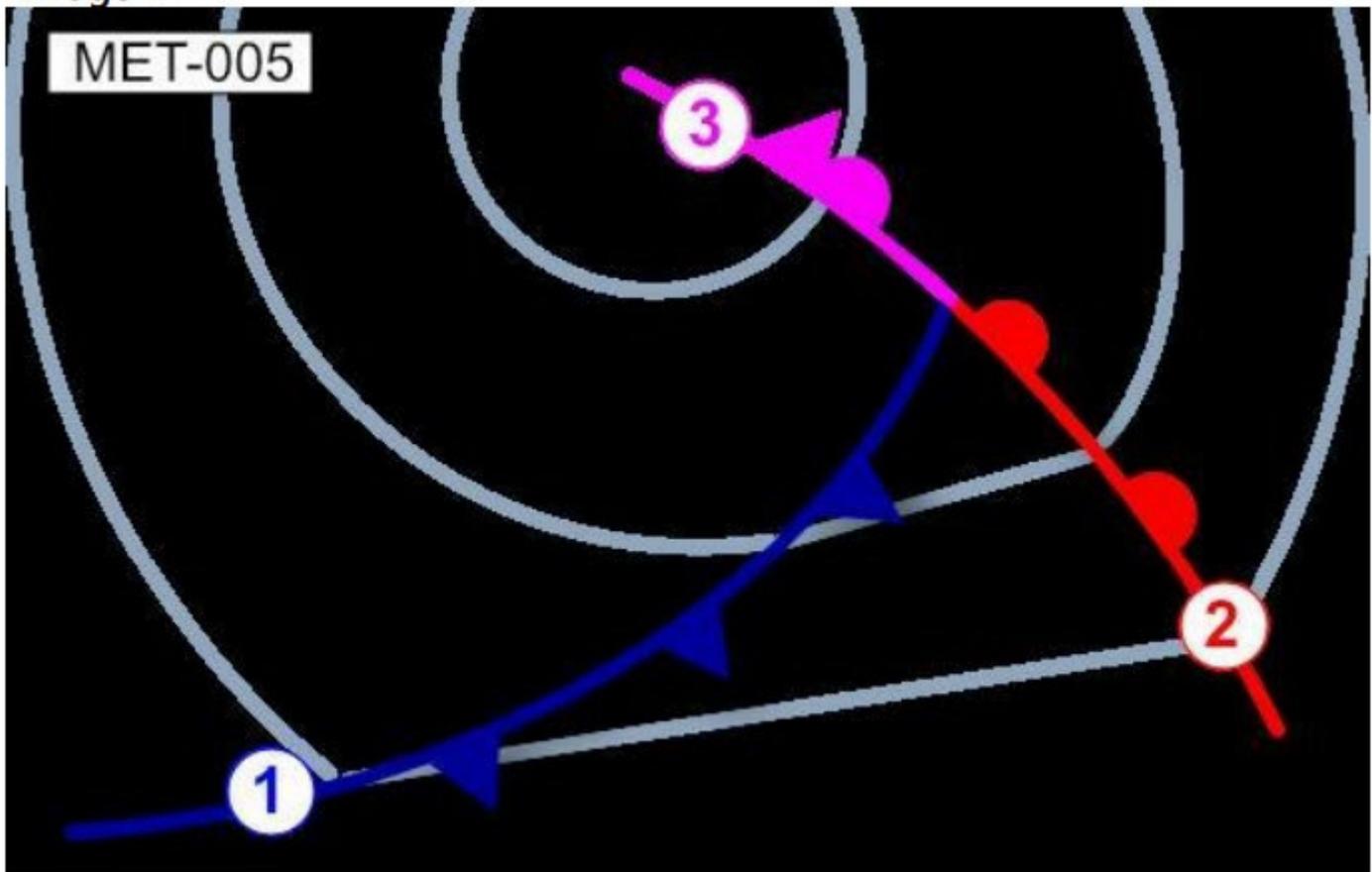
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**41. The symbol labeled (3) as shown in the picture is a / an... See figure (MET-005)**



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

**42. 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

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**43. At which height the load carrying capability of a gas balloon is reduced by approximately 50% compared to MSL?**

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- a) At 6500 m
- b) At 11000 m
- c) At 18000 m
- d) At 1500 m

**44. What is meant by the term "terrestrial navigation"?**

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- 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

**45. 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

**46. Damages at the basket ropes have to be fixed by:**

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- a) By the balloon pilot
- b) Upon the next Aeronautical Recurrence Certification
- c) By an Approved Aeronautical Workshop
- d) By tying with a part of a spare rope (during cruise)

**47. What is the correct course of action when experiencing a radio failure in class D airspace?**

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- a) The flight has to be continued above 5000 feet complying with VFR flight rules or the airspace has to be left by the shortest route
- b) The flight has to be continued according to the last clearance complying with VFR flight rules or the airspace has to be left using a standard routing
- c) The flight has to be continued according to the last clearance complying with VFR rules or the airspace has to be left by the shortest route
- d) The flight has to be continued above 5000 feet complying with VFR flight rules or the airspace has to be left using a standard routing

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

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

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

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

**50. The measurement of altitude is based on the change of the...**

---

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

**51. 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

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**52. 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  $\pm 10$  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

**53. A cross-country flight is made using the ICAO 1 : 500.000 aeronautical chart. An overflight crosscheck shows that a distance of 4 cm in the chart has been passed within 12 minutes. After how many more minutes, the overflight of another waypoint at a chart distance of additional 6 cm can be expected?**

---

- a) 9 min
- b) 6 min
- c) 12 min
- d) 18 min

**54. A true altitude is...**

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- 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

**55. 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

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## 56. Under which circumstances is it more likely to accept higher risks?

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- 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

## 57. 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

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

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- 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 purpose of the signal square at an aerodrome?

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- a) It is a specially marked area to pick up or drop towing objects
- b) It is an illuminated area on which search and rescue and fire fighting vehicles are placed
- c) It contains special symbols to indicate the conditions at the aerodrome visually to over-flying aircraft
- d) Aircraft taxi to this square to get light signals for taxi and take-off clearance

## 60. 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

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## 61. 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

## 62. Where are the two polar circles?

---

- a) 23.5° north and south of the poles
- b) 23.5° north and south of the equator
- c) At a latitude of 20.5°S and 20.5°N
- d) 20.5° south of the poles

## 63. What clouds and weather may result from a humid and unstable air mass, that is pushed against a chain of mountains by the predominant wind and forced to rise?

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- a) Embedded CB with thunderstorms and showers of hail and/or rain
- b) Overcast low stratus (high fog) with no precipitation
- c) Smooth, unstructured NS cloud with light drizzle or snow (during winter)
- d) Thin Altostratus and Cirrostratus clouds with light and steady precipitation

## 64. 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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**65. 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

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

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- 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

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

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- 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

**68. A distance of 7.5 cm on an aeronautical chart represents a distance of 60.745 NM in reality. What is the chart scale?**

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- a) 1 : 500000
- b) 1 : 1500000
- c) 1 : 1000000
- d) 1 : 150000

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

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

**70. 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?**

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- 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

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## Response Scheme

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

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

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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: _____		