

# Exam simulation

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



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STUDENT NAME:

DATE AND TIME:

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

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

**02. While overflying a waypoint, it is stated that a distance of 2 NM has been taken 10 min. What will be the expected time of endurance for the complete distance of 18 NM?**

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

**03. What wind conditions should be expected in the vicinity of showers or thunderstorms?**

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- a) Calm winds during passage of a shower
- b) Steady wind from direction of shower
- c) Strong gust from variable directions
- d) Steady wind into direction of shower

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

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

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**05. 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?**

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

**06. 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

**07. Which area could be crossed with certain restrictions?**

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- a) Restricted area
- b) No-fly zone
- c) Prohibited area
- d) Dangerous area

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**08. Up to which altitude is an overflight prohibited according to the NOTAM? See figure (PFP-024)**

A4604/11 NOTAMN

Q)

EDWW/QROLP/IV/NBO/W/000/095/5155N01037E004

A) EDWW

B) 1111180800 C) 1111181200

E) OVERFLYING PROHIBITED FOR ALL TRAFFIC RADIUS  
3.35NM CENTERED AROUND 515436N 0103725E DUE  
TO DEMOLITION OF EXPLOSIVES AT ECKERTHAL,  
(25NM S BRAUNSCHWEIG NDB BRU).

F) GND

G) 9500 FT AMSL

- a) Flight Level 95
- b) Altitude 9500 m MSL
- c) Height 9500 ft
- d) Altitude 9500 ft MSL

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

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

**10. Given: TC: 179°; WCA: -12°; VAR: 004° E; DEV: +002° What are MH and MC?**

- a) MH: 167°. MC: 175°
- b) MH: 167°. MC: 161°
- c) MH: 163°. MC: 175°
- d) MH: 163°. MC: 161°

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**11. During a flight in an air mass with a temperature equal to ISA and the QNH set correctly, the indicated altitude is...**

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

**12. Which abbreviation is used for the term "obstacle"?**

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- a) OBS
- b) OBST
- c) OBTC
- d) OST

**13. Times are transmitted as...**

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

**14. With regard to gases, which statement is correct?**

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- a) Temperature decreases with increasing pressure and constant volume
- b) Volume increases with increasing temperature and constant pressure
- c) Pressure decreases with increasing temperature and constant volume
- d) Temperature increases with increasing volume and decreasing pressure

**15. 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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**16. The term "aerodrome elevation" is defined as...**

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- a) The highest point of the landing area
- b) The average value of the height of the manoeuvring area
- c) The highest point of the apron
- d) The lowest point of the landing area

**17. The force resulting from the (positive) difference from load-bearing capacity and weight force, is referred to as:**

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- a) Load force
- b) Upper force
- c) Climb force
- d) Lift force

**18. How do volume, density and temperature change when a gas is being compressed?**

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- a) Volume decreases, density increases, temperature increases
- b) Volume decreases, density increases, temperature increases
- c) Volume increases, density decreases, temperature decreases
- d) Volume decreases, density decreases, temperature decreases

**19. 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

**20. After take-off with a balloon, obstacles at a distance of 300 m erect in expected flight path up to 40 m height. Rate of climb is expected with 1.5 m/s. What maximum actual wind speed can be accepted to maintain a clearance of 50 m above obstacles, assuming double the actual wind speed for calculation?**

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- a) 8 m/s
- b) 2.5 m/s
- c) 10 m/s
- d) 1 m/s

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**21. 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

**22. What process results in the formation of "orographic fog" ("hill fog")?**

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- a) Prolonged radiation during nights clear of clouds
- b) Warm, moist air is moved across a hill or a mountain range
- c) Evaporation from warm, moist ground area into very cold air
- d) Cold, moist air mixes with warm, moist air

**23. 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

**24. 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

**25. 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

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**26. What phenomenon is caused by cold air downdrafts with precipitation from a fully developed thunderstorm cloud?**

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- a) Freezing rain
- b) Gust front
- c) Electrical discharge
- d) Anvil-head top of Cb cloud

**27. At equilibrium the inner overpressure of a free balloon is highest at:**

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- a) At the equator
- b) The upper pole
- c) At the center of the hull
- d) At the lower opening

**28. The "spread" is defined as...**

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- a) Difference between dew point and condensation point
- b) Relation of actual to maximum possible humidity of air
- c) Difference between actual temperature and dew point
- d) Maximum amount of water vapour that can be contained in air

**29. 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

**30. 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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**31. 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

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

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

**33. What is the minimum flight visibility in airspace "C" at and above FL 100 for an aircraft operating under VFR?**

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- a) 10 km
- b) 8 km
- c) 5 km
- d) 1.5 km

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

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- 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

**35. During a balloon ride, visibility continuously becomes poorer, also cloud base decreases in direction of the current track. How should the balloon pilot react to this situation?**

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- a) Continue ride in remaining altitude
- b) Use next best chance for landing
- c) Use GPS or radio navigation to continue ride in clouds
- d) Break through the clouds and continue above clouds

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**36. Wake turbulence is caused by...**

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- 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

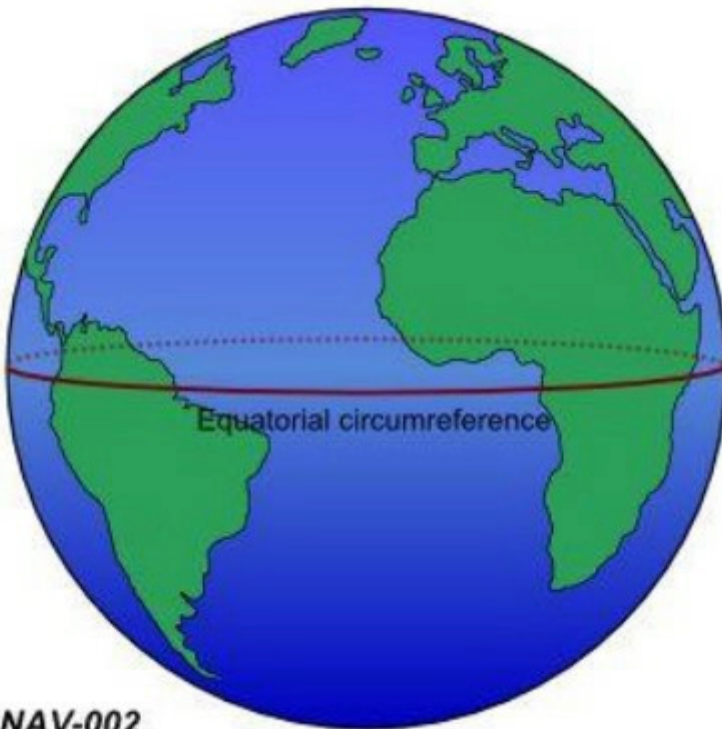
**37. The minimum length of the towing rope is:**

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- a) 20 m
- b) 50 m
- c) 100 m
- d) 30 m

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

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

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**39. Which transponder code indicates a loss of radio communication?**

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- a) 7700
- b) 7600
- c) 7000
- d) 2000

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

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- 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

**41. Which of the following documents have to be on board for an international flight? a) Certificate of aircraft registration b) Certificate of airworthiness c) Airworthiness review certificate d) EASA Form-1 e) Airplane logbook f) Appropriate papers for every crew member g) Technical logbook**

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- a) a, b, c, e, f
- b) d, f, g
- c) b, c, d, e, f, g
- d) a, b, e, g

**42. 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

**43. 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?**

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

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## 44. What statement is correct with regard to the density of a gas?

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- 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

## 45. 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

## 46. 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

## 47. Which phrase is to be used when a pilot wants the tower to know that he is ready for take-off?

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- a) Ready for start-up
- b) Ready for departure
- c) Ready
- d) Request take-off

## 48. 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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**49. At what rate does the temperature change with increasing height according to ISA (ICAO Standard Atmosphere) within the troposphere?**

---

- a) Increases by 2° C / 1000 ft
- b) Decreases by 2° C / 100 m
- c) Decreases by 2° C / 1000 ft
- d) Increases by 2° C / 100 m

**50. The term 'magnetic course' (MC) is defined as...**

---

- a) The angle between true north and the course line
- b) The direction from an arbitrary point on Earth to the magnetic north pole
- c) The direction from an arbitrary point on Earth to the geographic North Pole
- d) The angle between magnetic north and the course line

**51. Below maximum differential pressure of a gas balloon, temperature increase of the carrying gas by 1K results in:**

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- a) Volume decrease by 0.4%
- b) Volume increase by 0.4%
- c) Volume increase by 4%
- d) Volume decrease by 4%

**52. What phrase is used by a pilot if a transmission is to be answered with "yes"?**

---

- a) Affirmative
- b) Affirm
- c) Roger
- d) Yes

**53. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are the VAR and the DEV?**

---

- a) VAR: 004° E. DEV: -002°
- b) VAR: 004° W. DEV: +002°
- c) VAR: 004° E. DEV: +002°
- d) VAR: 004° W. DEV: -002°

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**54. Which distances to clouds have to be maintained during a VFR flight in airspaces C, D and E?**

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- a) 1000 m horizontally, 300 m vertically
- b) 1000 m horizontally, 1500 ft vertically
- c) 1500 m horizontally, 1000 m vertically
- d) 1500 m horizontally, 1000 ft vertically

**55. What values are usually marked with a red line on instrument displays?**

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

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

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

**57. The term 'True Course' (TC) is defined as...**

---

- a) The direction from an arbitrary point on Earth to the geographic North Pole
- b) The angle between true north and the course line
- c) The angle between magnetic north and the course line
- d) The direction from an arbitrary point on Earth to the magnetic north pole

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

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

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## 59. Cold air inflow in high tropospheric layers may result in...

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- a) Stabilisation and calm weather
- b) Showers and thunderstorms
- c) Calm weather and cloud dissipation
- d) Frontal weather

## 60. Which direction corresponds to 'compass north' (CN)?

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- a) The most northerly part of the magnetic compass in the aircraft, where the reading takes place
- b) The direction from an arbitrary point on Earth to the geographical North Pole
- c) The angle between the aircraft heading and magnetic north
- d) The direction to which the direct reading compass aligns due to earth's and aircraft's magnetic fields

## 61. 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

## 62. The vertical extent of air with pressure changing by 1% with 80 m difference in height is referred to as ...

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- a) Unstable
- b) Homogeneous
- c) Stable
- d) Inhomogeneous

## 63. 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

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## 64. How do dew point and relative humidity change with decreasing temperature?

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

## 65. 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

## 66. What has to be expected when diving into an inversion layer from above?

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

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

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

## 68. What does a readability of 3 indicate?

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

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**69. Information about pressure patterns and frontal situation can be found in which chart?**

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

**70. The majority of aviation accidents are caused by...**

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

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## Response Scheme

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

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

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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: _____		