

# Exam simulation

Quiz BPL Hot Air - Balloon Pilot License - Air Law



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STUDENT NAME:

DATE AND TIME:

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## 01. When do you expect wind shear?

- a) When passing a warm front
- b) During a summer day with calm winds
- c) During an inversion
- d) In calm wind in cold weather

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## 02. What is the correct way to transmit the call sign HB-YKM?

- a) Hotel Bravo Yuliett Kilo Mikro
- b) Home Bravo Yuliett Kilo Mike
- c) Home Bravo Yankee Kilo Mikro
- d) Hotel Bravo Yankee Kilo Mike

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## 03. The shown NOTAM is valid until... A) 1024/13 A) LOWW B) 1305211200 C) 1305211400 E) STOCKERAU VOR STO 113.00 UNSERVICEABLE.

- a) 21/05/2014 13:00 UTC.
- b) 13/05/2013 12:00 UTC.
- c) 13/10/2013 00:00 UTC.
- d) 13/10/2013 00:00 UTC.

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## 04. QFE is the...

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

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**05. (For this question, please use annex PFP-063) According ICAO, what symbol indicates a general spot elevation?  
Siehe Anlage 7**

- A 300
- B (300)
- C • 1737
- D • 1737

PFP-063

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

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

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

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

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

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## 08. The main burner is fed by which phase?

- a) By the low-pressure phase
- b) By the gas phase
- c) By the plasma phase
- d) By the liquid phase

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## 09. Air consists of oxygen, nitrogen and other gases. What is the approximate percentage of other gases?

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

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## 10. What does a readability of 5 indicate?

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

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## 11. 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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## 12. Which wind system may be dangerous for balloon rides in the Alps?

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

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

- 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

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## 14. A boundary between a cold polar air mass and a warm subtropical air mass showing no horizontal displacement is called...

- a) Warm front.
- b) Occluded front.
- c) Cold front.
- d) Stationary front.

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## 15. What is the meaning of a steady green light signal at a controlled aerodrome directed to an aircraft in flight?

- a) Airport unsafe, do not land
- b) Return for landing, followed by steady green at the appropriate time
- c) Cleared to land
- d) Give way to other aircraft and continue circling

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## 16. 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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## 17. The majority of aviation accidents are caused by...

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

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## 18. 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.

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

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

## 20. What has to be considered when entering an RMZ?

- a) To obtain a clearance to enter this area
- b) The transponder has to be switched on Mode C and squawk 7000
- c) To permanently monitor the radio and if possible to establish radio contact
- d) To obtain a clearance from the local aviation authority

## 21. The term 'agonic line' is defined as a line on Earth or an aeronautical chart, connecting all points with the...

- a) Deviation of 0°.
- b) Inclination of 0°.
- c) Heading of 0°.
- d) Variation of 0°.

## 22. 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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**23. What are primary criteria for selecting a landing site? 1. Obstacle situation 2. Elevation of the site 3. Strength of surface wind**

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

**24. On what frequency shall a blind transmission be made?**

- a) On a tower frequency
- b) On a radar frequency of the lower airspace
- c) On the appropriate FIS frequency
- d) On the current frequency

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

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

**26. What action has to be taken by the pilot of a hot-air balloon in case of fire on the ground? First action is to ...**

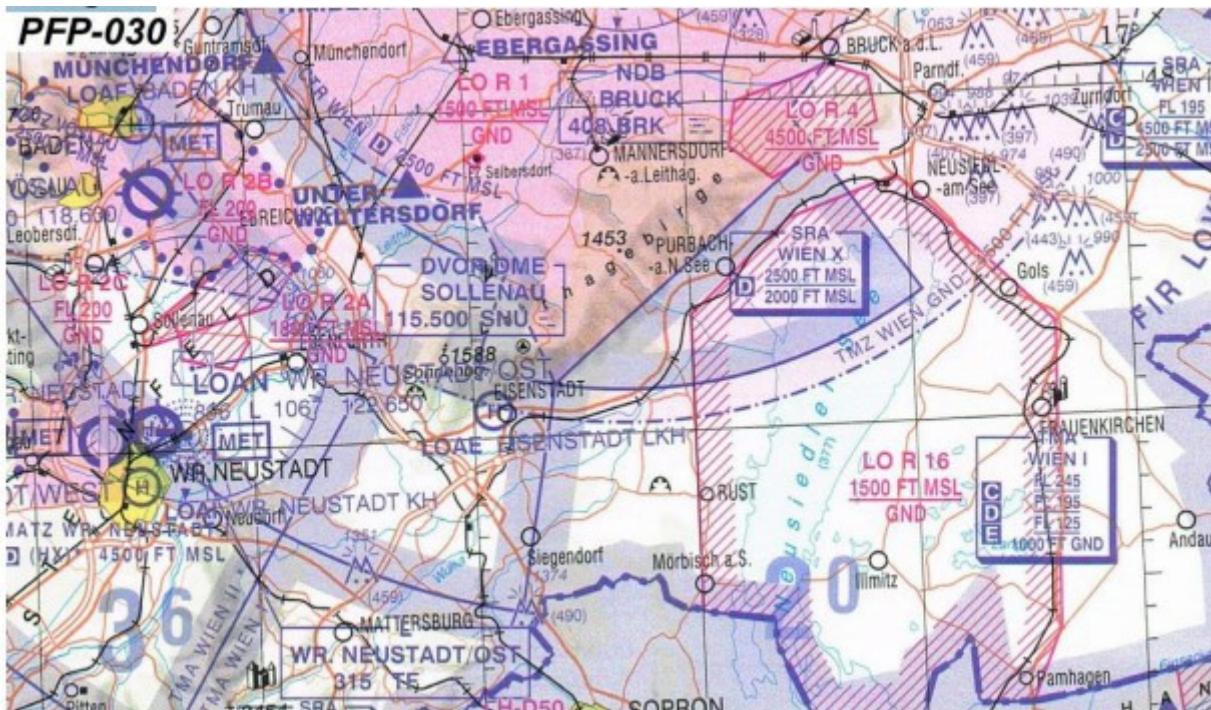
- a) Make an emergency call via radio
- b) Leave from the area surrounding the burner
- c) Close the valves of the gas containers.
- d) Engage the fire extinguishers.



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27. The upper limit of LO R 4 equals... See annex (PFP-030) Siehe Anlage 3



- a) 1.500 ft MSL.
- b) 1.500 ft AGL.
- c) 4.500 ft MSL.
- d) 4.500 ft AGL.

28. In what different ways can a risk be handled appropriately?

- a) Avoid, ignore, palliate, reduce
- b) Extrude, avoid, palliate, transfer
- c) Ignore, accept, transfer, extrude
- d) Avoid, reduce, transfer, accept

29. What factors are required for the formation of precipitation in clouds?

- a) High humidity and high temperatures
- b) The presence of an inversion layer
- c) Calm winds and intensive sunlight insolation
- d) Moderate to strong updrafts

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## 30. An inversion is a layer ...

- a) With increasing pressure with increasing height.
- b) With increasing temperature with increasing height
- c) With constant temperature with increasing height.
- d) With decreasing temperature with increasing height.

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## 31. What ground features should preferably be used for orientation during visual flight?

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

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## 32. What is the approximate speed of electromagnetic wave propagation?

- a) 300000 m/s
- b) 123000 m/s
- c) 300000 km/s
- d) 123000 km/s

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## 33. 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.

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

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

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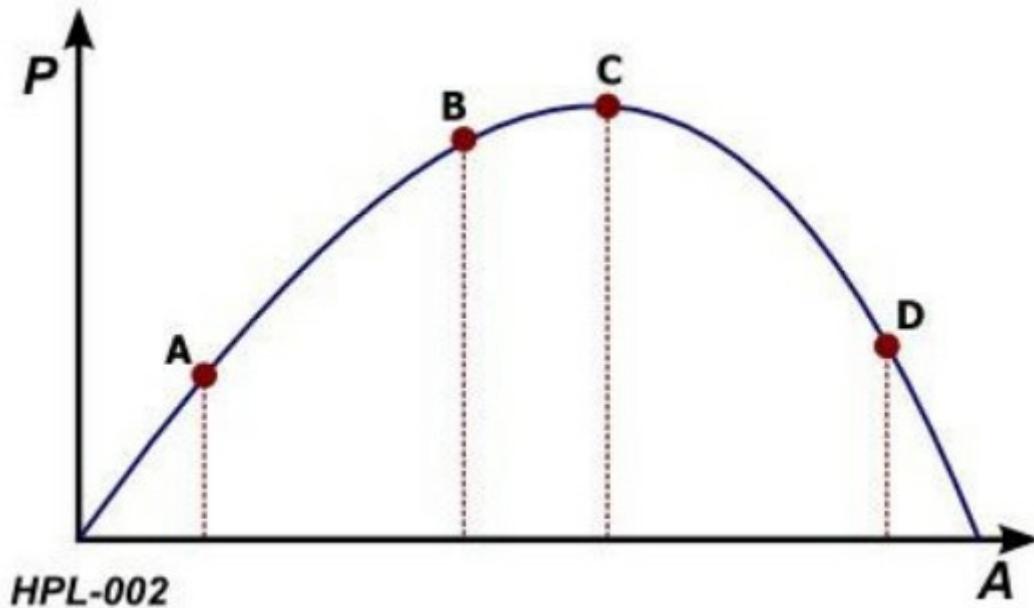


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35. Changing the shape of the envelope of a free balloon, e.g. by a gust, results in:

- a) Increase in lift.
- b) Decrease in volume
- c) Increase of displaced air.
- d) Decrease in weight.

36. At which point in the diagram will a pilot find himself to be overstrained? See figure (HPL-002) P = Performance A = Arousal / Stress Siehe Anlage 1



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

37. 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?

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

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**38. A pilot burner which is fed by the gas phase, works by which principle?**

- a) Electrostatic principle.
- b) Bunsen principle
- c) Aerostatic principle.
- d) Aerodynamic principle

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**39. The increase in load carrying capability by increasing the hull air temperature by the same temperature difference ...**

- a) Increases with balloon mass.
- b) Increases with altitude.
- c) Decreases with sinking.
- d) Decreases with altitude.

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

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

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

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

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**42. The term "tropopause" is defined as...**

- a) The layer above the troposphere showing an increasing temperature.
- b) The height above which the temperature starts to decrease.
- c) The boundary area between the mesosphere and the stratosphere.
- d) The boundary area between the troposphere and the stratosphere.

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**43. For what approximate time period can the short-time memory store information?**

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

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**44. Where does the inclination reach its lowest value?**

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

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**45. 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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46. 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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**47. The altimeter has to be set to what value in order to show zero on ground?**

- a) QNH
- b) QTE
- c) QFE
- d) QNE

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

- 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

**49. How do dew point and relative humidity change with decreasing temperature?**

- 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

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

- 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

**51. The vapour pressure of propane gas in a bottle depends in particular on:**

- a) The rigidity of the bottle.
- b) The size of the bottle.
- c) The temperature.
- d) The gas amount.

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**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

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

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

**54. Liqufaction of propane gas results in a reduction in volume to what fraction of the gas volume?**

- a) 1/160
- b) 1/260
- c) 1/360
- d) 1/60

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

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

**56. Which transponder code has to be set unrequested during an emergency?**

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

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**57. 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

**58. Which of the following options states the working principle of a vertical speed indicator?**

- a) Total air pressure is measured and compared to static pressure
- b) Static air pressure is measured and compared against a vacuum
- c) Measuring the present static air pressure and comparing it to the static air pressure inside a reservoir
- d) Measuring the vertical acceleration through the displacement of a gimbal-mounted mass

**59. Wake turbulence is particularly strong...**

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

**60. 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

**61. What is the purpose of "interception lines" in visual navigation?**

- 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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## 62. 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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## 63. What is referred to as mountain wind?

- a) Wind blowing uphill from the valley during daytime
- b) Wind blowing uphill from the valley during the night.
- c) Wind blowing down the mountain side during daytime
- d) Wind blowing down the mountain side during the night

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## 64. Why has a secondary ignition source be available during a ride with a hot-air balloon?

- a) As an emergency lighting during night.
- b) To check seals of hose connections during darkness.
- c) To provide light signals by a camping fire after an emergency landing.
- d) To re-ignite the burner or pilot flames after flameout.

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## 65. What is the purpose of the sounding pipe valve?

- a) It allows pressure equalization during cruise at high altitude
- b) To indicate the volumetric filling limit.
- c) It prevents air from entering the burner system
- d) For venting the liquid gas container bottle.

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## 66. Which of the following options are possible SSR-Transponder modes?

- a) B, R, S
- b) A, C, S
- c) A, C, R
- d) B, C, V

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67. 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.

68. 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.

69. What is the correct term for a message used for air traffic control?

- a) Flight safety message
- b) Flight regularity message
- c) Message related to direction finding
- d) Meteorological message

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**70. What is the difference in latitude between A (12°53'30"N) and B (07°34'30"S)?**

- a) 05°19'00"
- b) 20°28'00"
- c) 20,28°
- d) 05,19°

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## Response Scheme

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

01: **C**

02: **D**

03: **D**

04: **B**

05: **D**

06: **D**

07: **B**

08: **D**

09: **A**

10: **A**

11: **D**

12: **D**

13: **D**

14: **D**

15: **C**

16: **A**

17: **A**

18: **A**

19: **D**

20: **C**

21: **D**

22: **D**

23: **D**

24: **D**

25: **D**

26: **C**

27: **C**

28: **D**

29: **D**

30: **B**

31: **B**

32: **C**

33: **B**

34: **D**

35: **B**

36: **B**

37: **B**

38: **B**

39: **D**

40: **B**

41: **D**

42: **D**

43: **A**

44: **C**

45: **C**

46: **A**

47: **C**

48: **A**

49: **C**

50: **C**

51: **C**

52: **C**

53: **D**

54: **B**

55: **B**

56: **A**

57: **A**

58: **C**

59: **C**

60: **C**

61: **A**

62: **B**

63: **D**

64: **D**

65: **B**

66: **B**

67: **D**

68: **A**

69: **A**

70: **B**

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## Response form

Use this form to mark your answers

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

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