

# Exam simulation

SPL - Sailplane Pilot License - Principles of Flight (Aeroplane)



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STUDENT NAME:

DATE AND TIME:

## 01. What is shown by a profile polar?

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- a) Ratio between minimum rate of descent and best glide
- b) Ratio between total lift and drag depending on angle of attack
- c) Ratio of  $c_A$  and  $c_D$  at different angles of attack
- d) Lift coefficient  $c_A$  at different angles of attack

## 02. Differential aileron deflection is used to...

---

- a) Reduce wake turbulence
- b) Avoid a stall at low angles of attack
- c) Keep the adverse yaw low
- d) Increase the rate of descent

## 03. What type of turbulence is typically found close to the ground on the lee side during Foehn conditions?

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- a) Clear-air turbulence (CAT)
- b) Inversion turbulence
- c) Turbulence in rotors
- d) Thermal turbulence

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

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

## 05. What is the call sign of the surface movement control?

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- a) Control
- b) Tower
- c) Earth
- d) Ground

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**06. Along with other gliders, you are circling in a thermal updraft. Who determines the direction of circling?**

---

- a) Circling is general to the left
- b) The glider who entered the updraft at first
- c) The glider with greatest bank angle
- d) The glider at highest altitude

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

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

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08. Which answer completes the flight plan (marked cells)? See annex (NAV-014)

P6		P7		P8	P9	P9	P10	
<b>NAV-014</b>		Wind W/V		rwk	L	rwSK	MW	mwSK
VE	Wind W/WS							
<b>TAS</b>	Richtung	Geschw.	<b>TC</b>	<b>WCA</b>	<b>TH</b>	<b>VAR</b>	<b>MH</b>	
75	320	15	247	+11	258	1	257	
95	320	15	152	+2	154	1	153	
95	320	15	139	0	139	1	138	
95	320	15	161	+3	164	1	163	
95	320	15	179	+6		1		

- a) TH: 185°. MH: 184°. MC: 178°
- b) TH: 173°. MH: 184°. MC: 178°
- c) TH: 173°. MH: 174°. MC: 178°
- d) TH: 185°. MH: 185°. MC: 180°

09. How can you determine wind direction in case of an outlanding?

- a) Monitoring of smoke, flags, waving fields
- b) Wind forecast from flight weather report
- c) Request from other pilots who can be reached by radio
- d) Remembering the wind indicated by the windsock at departing airfield

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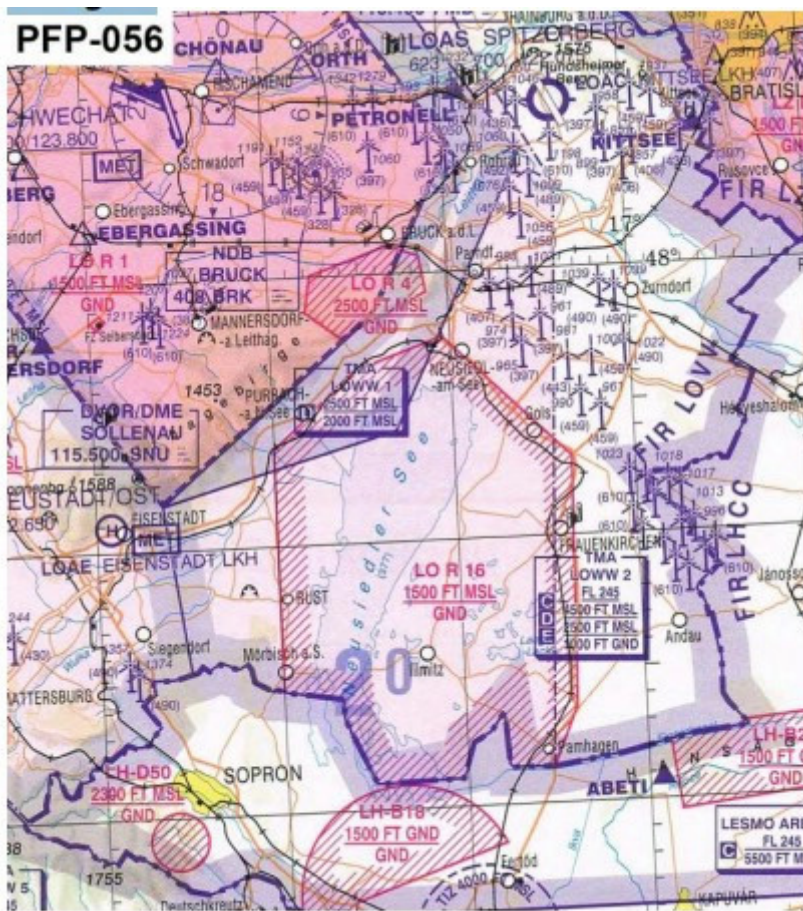


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## 10. Visual illusions are mostly caused by...

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

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



- a) 1.500 ft GND
- b) 1 500 ft MSL
- c) 1 500 m MSL
- d) FL150

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**12. During an approach the aeroplane experiences a windshear with a decreasing headwind. If the pilot does not make any corrections, how do the approach path and the indicated airspeed (IAS) change?**

---

- a) Path is higher, IAS increases
- b) Path is lower, IAS decreases
- c) Path is lower, IAS increases
- d) Path is higher, IAS decreases

**13. Which statement about a rhumb line is correct?**

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- a) A rhumb line is a great circle intersecting the equator with 45° angle.
- b) The center of a complete cycle of a rhumb line is always the Earth's center.
- c) A rhumb line cuts each meridian at the same angle.
- d) The shortest track between two points along the Earth's surface follows a rhumb line.

**14. Which altitude is displayed on the altimeter when set to a specific QNH?**

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- a) Altitude in relation to mean sea level
- b) Altitude in relation to the 1013.25 hPa datum
- c) Altitude in relation to the highest elevation within 10 km
- d) Altitude in relation to the air pressure at the reference airfield

**15. What has to be considered when entering an RMZ?**

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

**16. An aircraft is following a true course (TC) of 040° at a constant true airspeed (TAS) of 180 kt. The wind vector is 350°/30 kt. The wind correction angle (WCA) equals...**

---

- a) 7° left
- b) 7° right
- c) 3° right
- d) 3° left

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

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

**18. What is the purpose of the secondary flight controls?**

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- a) To improve the performance characteristics of an aircraft and relieve the pilot of excessive control forces
- b) To improve the turn characteristics of an aircraft in the low speed regime during approach and landing
- c) To enable the pilot to control the aircraft's movements about its three axes
- d) To constitute a backup system for the primary flight controls

**19. The critical angle of attack...**

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- a) Increases with a front centre of gravity
- b) Is changed by different aircraft weights
- c) Is not changed by different aircraft weights
- d) Decreases with a rear centre of gravity

**20. Which of the following landing areas is most suitable for an off-field landing?**

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- a) A field with ripe waving crops
- b) A meadow without livestock
- c) A light brown field with short crops
- d) A lake with an undisturbed surface

**21. During approach, tower provides the following information: "Wind 15 knots, gusts 25 knots". How should the landing be performed?**

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- a) Approach with minimum speed, correct changes in attitude with careful rudder inputs
- b) Approach with normal speed, maintain speed using spoiler flaps
- c) Approach with increased speed, correct changes in attitude with firm rudder inputs
- d) Approach with increased speed, avoid usage of spoiler flaps

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## 22. A pilot license issued in accordance with ICAO Annex 1 is valid in...

---

- a) Those countries that have accepted this license on application.
- b) The country where the license was acquired.
- c) All ICAO countries.
- d) The country where the license was issued.

## 23. In which situation is radio mandatory zone (RMZ) entry allowed without establishing radio contact?

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- a) There are other aircraft in the aerodrome circuit
- b) It is the aerodrome of departure
- c) It is the destination aerodrome
- d) Approval has been granted before

## 24. The thickness of the wing is defined as the distance between the lower and the upper side of the wing at the...

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- a) Thinnest part of the wing
- b) Most inner part of the wing
- c) Thickest part of the wing
- d) Most outer part of the wing

## 25. For a short flight from A to B the pilot extracts the following information from an aeronautical chart: True course: 245°. Magnetic variation: 7° W The magnetic course (MC) equals...

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- a) 238°
- b) 245°
- c) 252°
- d) 007°

## 26. The term "aerodrome elevation" is defined as...

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

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## 27. Distress messages are messages...

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- a) Concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight
- b) Concerning the operation or maintenance of facilities which are important for the safety and regularity of flight operations
- c) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance
- d) Sent by a pilot or an aircraft operating agency which have an imminent meaning for aircraft in flight

## 28. Which factor can lead to human error?

---

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

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

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

## 30. What change of wind direction can be expected during the passage of a polar front low in Central Europe?

---

- a) Backing wind during passage of the warm front, veering wind during passage of the cold front
- b) Veering wind during passage of the warm front, veering wind during passage of the cold front
- c) Veering wind during passage of the warm front, backing wind during passage of the cold front
- d) Backing wind during passage of the warm front, backing wind during passage of the cold front

## 31. What does the abbreviation "H24" stand for?

---

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

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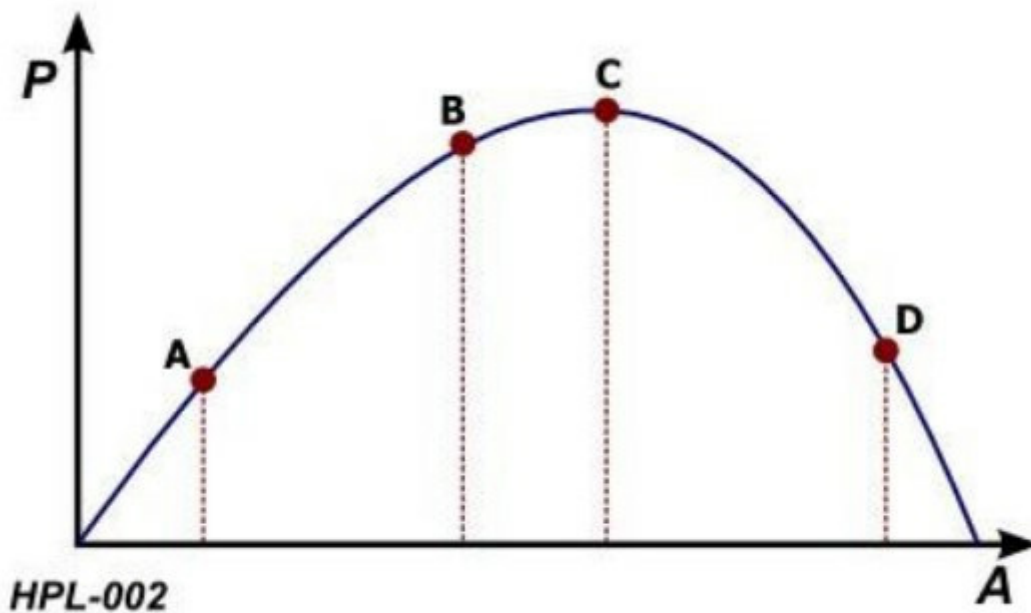
32. Which answer is correct with regard to separation in airspace "E"?

- a) VFR traffic is not separated from any other traffic
- b) VFR traffic is separated only from IFR traffic
- c) VFR traffic is separated from VFR and IFR traffic
- d) IFR traffic is separated only from VFR traffic

33. In a METAR, "heavy rain" is designated by the identifier...

- a) RA
- b) +RA
- c) SHRA
- d) +SHRA

34. The ideal level of arousal is at which point in the diagram? See figure (HPL- 002) P = Performance A = Arousal / Stress



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

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## 35. Extending airbrakes results in ...

---

- a) Less drag and more lift
- b) More drag and less lift
- c) More drag and more lift
- d) Less drag and less lift

## 36. Trim masses or lead plates must be secured firmly when installed into a gliding plane, so that...

---

- a) The maximum allowed mass will not be exceeded
- b) A comfortable seat position will be assured for the glider pilot
- c) They will not block rudders or induce any C.G. shift
- d) The glider pilot will not be hurt during flight in thermal turbulences

## 37. Which are the properties of a Mercator chart?

---

- a) The scale is constant, great circles are depicted as curved lines, rhumb lines are depicted as straight lines
- b) The scales increases with latitude, great circles are depicted as curved lines, rhumb lines are depicted as straight lines
- c) The scales 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

## 38. Rotation around the vertical axis is called...

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- a) Slipping
- b) Pitching
- c) Yawing
- d) Rolling

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

---

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

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## 40. Times are transmitted as...

---

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

## 41. A glider's trim lever is used to...

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- a) Reduce stick force on the elevator
- b) Reduce stick force on the ailerons
- c) Reduce stick force on the rudder
- d) Reduce the adverse yaw

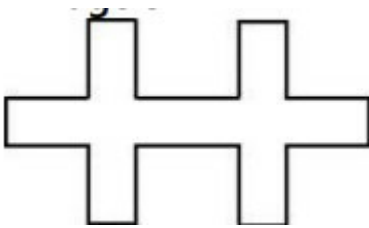
## 42. How is an air mass described when moving to Central Europe via the Russian continent during winter?

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- a) Maritime tropical air
- b) Continental polar air
- c) Maritime polar air
- d) Continental tropical air

## 43. What is the meaning of this sign at an aerodrome? See figure (ALW-011)

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- a) After take-off and before landing all turns have to be made to the right
- b) Caution, manoeuvring area is poor
- c) Glider flying is in progress
- d) Landing prohibited for a longer period

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**44. The term "moment" with regard to a mass and balance calculation is referred to as...**

---

- a) Sum of a mass and a balance arm
- b) Difference of a mass and a balance arm
- c) Quotient of a mass and a balance arm
- d) Product of a mass and a balance arm

**45. The sun moves  $10^\circ$  of longitude. What is the difference in time?**

---

- a) 0.66 h
- b) 0.4 h
- c) 1 h
- d) 0.33 h

**46. The laminar boundary layer on the aerofoil is located between...**

---

- a) The stagnation point and the center of pressure
- b) The stagnation point and the transition point
- c) The transition point and the separation point
- d) The transition point and the center of pressure

**47. Which statement is correct with regard to the short-term memory?**

---

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

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

---

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

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**49. In what situation is it appropriate to set the transponder code 7600?**

---

- a) Hijacking
- b) Emergency
- c) Flight into clouds
- d) Loss of radio

**50. An aircraft is flying with a true airspeed (TAS) of 120 kt and experiences 35 kt tailwind. How much time is needed for a distance of 185 NM?**

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- a) 1 h 12 min
- b) 2 h 11 min
- c) 0 h 50 min
- d) 1 h 32 min

**51. Which instrument can be affected by the hysteresis error?**

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

**52. In what cases is visibility transmitted in kilometers?**

---

- a) Greater than 10 km
- b) Up to 5 km
- c) Greater than 5 km
- d) Up to 10 km

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

---

- A 
- B 
- C 
- D 

PFP-062

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

**54. The altimeter can be checked on the ground by setting...**

---

- a) QFF and comparing the indication with the airfield elevation
- b) QFE and comparing the indication with the airfield elevation
- c) QNH and comparing the indication with the airfield elevation
- d) QNE and checking that the indication shows zero on the ground

**55. How do lift and drag change when approaching a stall condition?**

---

- a) Lift decreases and drag increases
- b) Lift and drag increase
- c) Lift increases and drag decreases
- d) Lift and drag decrease

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**56. The trim wheel or lever in the cockpit is moved aft by the pilot. What effect does this action have on the trim tab and on the elevator?**

---

- a) The trim tab moves up, the elevator moves down
- b) The trim tab moves down, the elevator moves up
- c) The trim tab moves up, the elevator moves up
- d) The trim tab moves down, the elevator moves down

**57. Primary fuselage structures of wood or metal planes are usually made up by what components?**

---

- a) Covers, stringers and forming parts
- b) Frames and stringers
- c) Girders, ribs and stringers
- d) Ribs, frames and covers

**58. The center of gravity (CG) defines...**

---

- a) The point on the longitudinal axis or its extension from which the centers of gravity of all masses are referenced
- b) The point through which the force of gravity is said to act on a mass
- c) The distance from the datum to the position of a mass
- d) The product of mass and balance arm

**59. Under which conditions "back side weather" ("Rückseitenwetter") can be expected?**

---

- a) After passing of a cold front
- b) Before passing of an occlusion
- c) During Foehn at the lee side
- d) After passing of a warm front

**60. What information is provided in the general part (GEN) of the AIP?**

---

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

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**61. Which characteristic is important when choosing sunglasses used by pilots?**

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

**62. What are the primary and the secondary effects of a rudder input to the left?**

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- a) Primary: yaw to the right Secondary: roll to the left
- b) Primary: yaw to the left Secondary: roll to the left
- c) Primary: yaw to the right Secondary: roll to the right
- d) Primary: yaw to the left Secondary: roll to the right

**63. What is the correct frequency for an initial distress message?**

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- a) Radar frequency
- b) Current frequency
- c) FIS frequency
- d) Emergency frequency

**64. What is the percentage of oxygen in the atmosphere at 6000 ft?**

---

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

**65. In what case is visibility transmitted in meters?**

---

- a) Up to 5 km
- b) Greater than 10 km
- c) Greater than 5 km
- d) Up to 10 km

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**66. The term "static pressure" is defined as pressure...**

---

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

**67. What is the difference in time when the sun moves 20° of longitude?**

---

- a) 1:00 h
- b) 0:40 h
- c) 0:20 h
- d) 1:20 h

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

---

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

**69. Which of the following options states all primary flight controls of an aircraft?**

---

- a) Flaps, slats, speedbrakes
- b) Elevator, rudder, aileron, trim tabs, high-lift wing devices, power controls
- c) Elevator, rudder, aileron
- d) All movable parts on the aircraft which aid in controlling the aircraft

**70. What is the approximate speed of electromagnetic wave propagation?**

---

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

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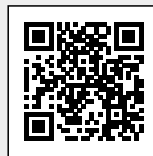
## Response Scheme

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

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

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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: _____
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61: _____	62: _____	63: _____	64: _____
65: _____	66: _____	67: _____	68: _____
69: _____	70: _____		