

# Exam simulation

PPL(H) - Private Pilot License - Flight Performance and Planning



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STUDENT NAME:

DATE AND TIME:

## 01. The term "flight time" is defined as...

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- a) The period from engine start for the purpose of taking off to leaving the aircraft after engine shutdown.
- b) The total time from the first take-off until the last landing in conjunction with one or more consecutive flights.
- c) The period from the start of the take-off run to the final touchdown when landing.
- d) The total time from the first aircraft movement until the moment it finally comes to rest at the end of the flight.

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

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

## 03. The barometric altimeter with QFE setting indicates...

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- a) Height above standard pressure 1013.25 hPa.
- b) Height above the pressure level at airfield elevation.
- c) True altitude above MSL.
- d) Height above MSL.

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04. What is the nature of the flight shown in the given ATC flight plan? See annex (PFP-051a)

PFP-051a			
3 MESSAGE TYPE	7 AIRCRAFT IDENTIFICATION	8 FLIGHT RULES	TYPE OF FLIGHT
<=(FPL	OEABC	V	G <=
9 NUMBER	TYPE OF AIRCRAFT	WAKE TURBULENCE CAT.	10 EQUIPMENT
	DV20	L	ORV / C <=
13 DEPARTURE AERODROME	TIME		
LOWK	2000 <=		
15 CRUISING SPEED	LEVEL	ROUTE	
N0100	F095	KFT GRZ PUBEG SNU	
			<=
16 DESTINATION AERODROME	TOTAL EET	ALTN AERODROME	2ND ALTN AERODROME
LOWW	0215	LOAN	
			<=
18 OTHER INFORMATION			
			<=

- a) Flight under instrument flight rules.
- b) Border crossing flight.
- c) Night flight under visual flight rules.
- d) Traffic pattern under visual flight rules.

05. What behavior does a helicopter without stabilization systems show after external disturbances in a hover, without a corrective action?

- a) Statically stable and dynamically instable
- b) Statically stable and dynamically stable
- c) Statically indifferent and dynamically instable
- d) Statically stable and dynamically indifferent

06. What happens to thrust and tangential force if the rotor RPM decreases by about 10 % in cruise flight?

- a) The thrust and the tangential force decrease
- b) The thrust and the tangential force increase
- c) The thrust decreases and the tangential force remains constant
- d) The thrust remains constant and the tangential force increases

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## 07. What happens during oil filter clogging?

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- a) A bypass valve opens thus enabling the circulation to continue, debris will not be filtered
- b) The oil circulation will end after 30 minutes so that a proper engine run will not be guaranteed
- c) A bypass valve opens thus enabling the circulation to continue, debris will be filtered by an alternate filter
- d) The oil circulation will end after 15 minutes so that a proper engine run will not be guaranteed

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

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

## 09. Calculated take-off mass = 1082 kg, calculated CG = 0.254 m, fuel burn = 55 l on station 0.40 m. Where is the CG situated after the landing?

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- a) 24.8 cm
- b) 25.2 cm
- c) 24.6 cm
- d) 25.4 cm

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

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

## 11. The term "ceiling" is defined as the...

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- a) Altitude of the base of the lowest layer of clouds covering more than half of the sky below 20000 ft.
- b) Height of the base of the lowest layer of clouds covering more than half of the sky below 10000 ft.
- c) Height of the base of the highest layer of clouds covering more than half of the sky below 20000 ft.
- d) Height of the base of the lowest layer of clouds covering more than half of the sky below 20000 ft.

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

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

**13. The pilot wants to refuel the helicopter after a cold night early in the morning. What needs to be checked before starting the engine?**

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- a) VHF communication for transmission
- b) Carburettor heat for function
- c) Left seat controls for damage and tight fit
- d) Fuel for water content and impurities

**14. At higher altitudes, true airspeed (TAS) tends to be higher than calibrated airspeed (CAS). A rough estimate of the TAS can be obtained by...**

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- a) Subtracting 2 % of the CAS for every 1000 ft altitude.
- b) Adding 2 % of the CAS for every 1000 ft altitude.
- c) Subtracting 10 % of the CAS for every 1000 m altitude.
- d) Adding 10 % of the CAS for every 1000 ft altitude.

**15. The center of gravity has to be located...**

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- a) Behind the rear C.G. limit.
- b) Right of the lateral C. G. limit.
- c) Between the front and the rear C.G. limit.
- d) In front of the front C.G. limit.

**16. Which Q-code is used for the magnetic bearing from the station?**

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- a) QDR
- b) QUJ
- c) QDM
- d) QTE

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**17. What situation is called "over-development" in a weather report?**

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- a) Development of a thermal low to a storm depression
- b) Vertical development of Cumulus clouds to rain showers
- c) Widespread spreading of Cumulus clouds below an inversion layer
- d) Change from blue thermals to cloudy thermals during the afternoon

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

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

**19. The trim is used to...**

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- a) Adapt the control force.
- b) Lock control elements.
- c) Move the centre of gravity.
- d) Increase adverse yaw.

**20. Given: True course from A to B: 250°. Ground distance: 210 NM. TAS: 130 kt. Headwind component: 15 kt. Estimated time of departure (ETD): 0915 UTC. The estimated time of arrival (ETA) is...**

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- a) 1005 UTC.
- b) 1105 UTC.
- c) 1052 UTC.
- d) 1115 UTC.

**21. Which runway designators are correct for 2 parallel runways?**

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- a) "06L" and "06R"
- b) "24" and "25"
- c) "26" and "26R"
- d) "18" and "18-2"

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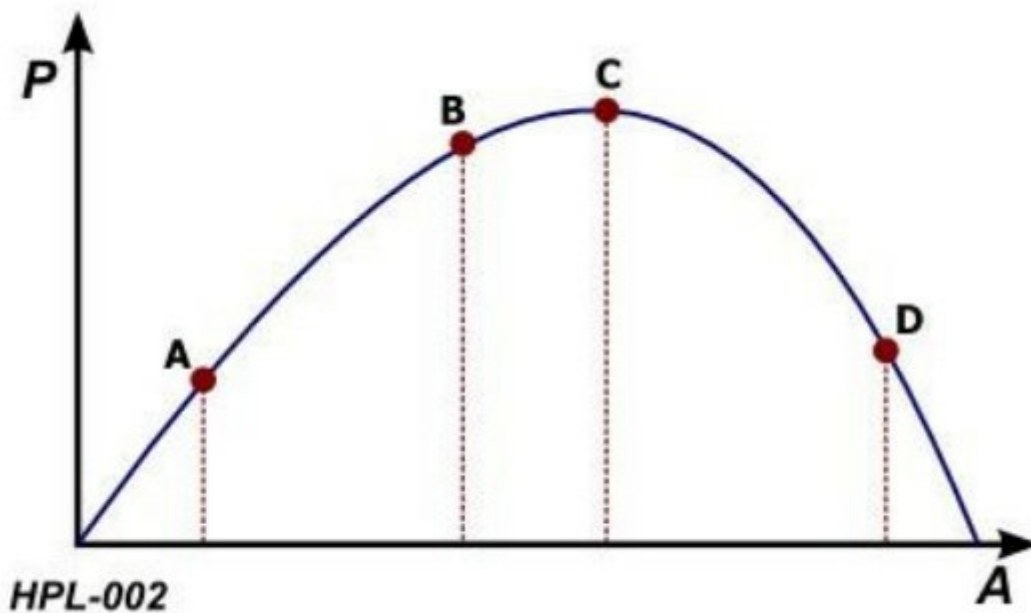
**22. What action is necessary in a modern helicopter during the transition to a horizontal turn?**

- a) A control column movement forward or raising the collective
- b) Open the throttle in a helicopter with a rotor turning in an anti-clockwise direction seen from above
- c) Open the throttle in a helicopter with a rotor turning in a clockwise direction seen from above
- d) A control column movement backward or raising the collective

**23. After entering an autorotation a large helicopter mass leads to...**

- a) A rapid collapse of the rotor RPM
- b) A rapid build-up of the rotor RPM
- c) A large change in center of gravity
- d) A small rate of descent in a vertical autorotation

**24. 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 A
- b) Point B
- c) Point D
- d) Point C

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## 25. What shape of a rotor blade has a positive impact on the lift distribution?

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- a) Rectangular blade with a geometric setting of  $1^\circ$
- b) Double trapezoidal rotor blade with a radius at the blade tip
- c) Trapezoidal blade without radius at the blade tip
- d) Rectangular trapezoidal blade with no aerodynamic twist

## 26. To which privileges are you entitled by holding a private pilot license (PPL) with an endorsed type rating for helicopters?

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- a) To conduct commercial flights when the helicopter is approved for not more than six seats and to work as a flight instructor in a commercial flight academy
- b) To conduct non-commercial flights with passengers, provided the pilot-in-command has carried out at least three take-offs and landings within the last 90 days
- c) To conduct non-commercial flights with passengers, provided the pilot-in-command has carried out at least five take-offs and landings within the last 120 days
- d) To conduct commercial flights when the helicopter is approved for not more than four seats and to work as a flight instructor in a commercial flight academy

## 27. The reason for a stall at a given pitch angle can be...

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- a) Constant peripheral speed and great vertical airflow through the rotor
- b) Smaller vertical airflow through the rotor and constant peripheral speed
- c) Smaller effective angle of attack and small peripheral speed
- d) Smaller frontal resistance and turbulent airflow

## 28. What kind of drag is caused by a lift-producing aerofoil?

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- a) Parasite drag
- b) Frictional drag
- c) Interference drag
- d) Induced drag

## 29. A heading of 285 degrees is correctly transmitted as...

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- a) Two eight five.
- b) Two hundred eight five
- c) Two hundred eighty-five.
- d) Two eight five hundred.

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## 30. Which items should a passenger briefing in case of an imminent emergency landing include?

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- a) Blood type of the other aircraft occupants, location of the first-aid kit
- b) Nature of the emergency, intentions, safety position, evacuation routes, actions after landing
- c) How to work the aircraft radio, emergency transponder squawk, telephone number of the competent search and rescue (SAR) center
- d) How to read an emergency checklist, how to cut the engine, telephone number of the home airport

## 31. 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.

## 32. What can be expected during a hover flight in ground effect within a forest glade?

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- a) Useful ground effect caused by a smaller induced airflow
- b) No air turbulence through the slipstream and stable attitude
- c) Aspiration of the tail rotor in the direction of the forest and a performance gain
- d) Recirculation of air masses and an impairment of the ground effect

## 33. Which gas is most dangerous during an engine fire?

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- a) Nitrogen
- b) Carbon monoxide
- c) Carbon dioxide
- d) Oxygen

## 34. What information can be obtained from satellite images?

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- a) Turbulence and icing
- b) Flight visibility, ground visibility, and ground contact
- c) Overview of cloud covers and front lines
- d) Temperature and dew point of environmental air

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**35. A Grey-out is the result of...**

---

- a) Tiredness
- b) Hypoxia
- c) Hyperventilation
- d) Positive g-forces

**36. What mass equals 102 litres of Avgas 100LL?**

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- a) 74 lbs
- b) 142 lbs
- c) 142 kg
- d) 74 kg

**37. Which of the following is NOT a symptom of hyperventilation?**

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- a) Tingling
- b) Spasm
- c) Disturbance of consciousness
- d) Cyanosis

**38. What is the correct phrase to begin a blind transmission?**

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- a) Blind
- b) Transmitting blind
- c) No reception
- d) Listen

**39. An inversion layer close to the ground can be caused by...**

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- a) Ground cooling during the night.
- b) Thickening of clouds in medium layers.
- c) Intensifying and gusting winds.
- d) Large-scale lifting of air.

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

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

**41. SIGMET warnings are issued for...**

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- a) Specific routings.
- b) Countries.
- c) Airports.
- d) FIRs / UIRs.

**42. When preparing to carry out the weighing procedure on an aircraft, which of the following is required?**

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- a) Remove the batteries
- b) Remove service equipment
- c) Drain all engine tank oil
- d) Drain all useable fuel

**43. What is the advantage of a pushing tail rotor over a pulling tail rotor?**

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- a) Gain of thrust by Coanda and Magnus effect due to the airflow around the tail boom
- b) Effective airflow of tail rotor blades by using the downwash
- c) Less thrust loss by free outflow of the accelerated air mass
- d) Self-compensating anti-torque operation by using the downwash

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

---

- a) It can store 3 ( $\pm 1$ ) items for 5 to 10 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 7 ( $\pm 2$ ) items for 10 to 20 seconds

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## 45. Which of the following symptoms may indicate hypoxia?

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- a) Blue discolouration of lips and fingernails
- b) Muscle cramps in the upper body area
- c) Blue marks all over the body
- d) Joint pain in knees and feet

## 46. The term "runway" is defined as a...

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- a) Rectangular area on a land or water aerodrome prepared for the landing and take-off of aircraft.
- b) Round area on an aerodrome prepared for the landing and take-off of aircraft.
- c) Rectangular area on a land aerodrome prepared for the landing and take-off of helicopters.
- d) Rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

## 47. The power output of a turbine engine is limited by...

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- a) Auxiliary equipment rack and exhaust system in multi-shaft turbine engines.
- b) Compressor RPM, turbine inlet temperature, and main rotor gearbox.
- c) Fuel type, burn rate, and exhaust system.
- d) Freewheel unit and main rotor gearbox in single-shaft turbine engines.

## 48. If the critical angle of attack is exceeded, the...

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- a) Transition point starts moving towards the airflow direction
- b) Boundary layer on the upper side of the rotor blade begins to separate
- c) Boundary layer on the lower side of the rotor blade begins to separate
- d) Laminar boundary layer turns into a turbulent boundary layer

## 49. The airframe of an accelerating helicopter continues to bend until the...

---

- a) Horizontal thrust component equals the drag
- b) Thrust passes in front of the centre of gravity
- c) Vertical thrust component equals the drag
- d) Thrust passes behind the centre of gravity

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

---

- a) One one niner thousand decimal five zero
- b) One one niner decimal five zero zero
- c) One one niner decimal five zero
- d) One one niner decimal five

## 51. What types of airflow can be observed around a rotor blade aerofoil?

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- a) Laminar airflow on the entire upper surface
- b) Laminar airflow at the leading edge, turbulent airflow further back
- c) Turbulent airflow at the leading edge, laminar airflow further back
- d) Turbulent airflow on the entire upper surface

## 52. The basic empty mass of an aircraft includes...

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- a) The total mass of the aeroplane ready for a specific type of operation including crew, navigation instruments and engine cowling.
- b) The mass of the aeroplane plus standard items such as unusable fuel and other unusable liquids, lubricating oil in engine and auxiliary units, fire extinguishers, pyrotechnics, emergency oxygen equipment, supplementary electronic equipment.
- c) The total mass of an aeroplane ready for a specific type of operation including the required fuel and crew, but excluding traffic load.
- d) The total mass of the aeroplane ready for a specific type of operation excluding unusable fuel and traffic load. The mass includes items such as crew and crew baggage.

## 53. The validity period of a helicopter type rating is...

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- a) 10 years.
- b) 1 year.
- c) 2 years.
- d) 5 years.

## 54. Which statement about the required force to change the pitch angle is correct?

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- a) It is the smallest by using an advance angle of  $90^\circ$
- b) It is the smallest by using a delta-three-hinge
- c) It must be greater than the rotor disc loading
- d) It must be greater than the tangential force

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## 55. The droop stop...

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- a) Limits blade flapping and prevents rotor blade stall.
- b) Reduces the risk of rotor blade contact with the tail boom at low rotor RPM.
- c) Decreases the bending and tensional loads on the rotor blades in all flight conditions.
- d) Allows the rotor blades to flap upwards without restrictions.

## 56. The distance from 'A' to 'B' measures 120 NM. At a distance of 55 NM from 'A' the pilot realizes a deviation of 7 NM to the right. What approximate course change must be made to reach 'B' directly?

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- a) 15° left
- b) 6° left
- c) 14° left
- d) 8° left

## 57. Two aeroplanes are flying on crossing tracks. Which one has to divert?

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- a) The aircraft which flies from left to right has the right of priority
- b) The aircraft which flies from right to left has the right of priority
- c) Both have to divert to the left
- d) Both have to divert to the right

## 58. What needs to be considered if permissible limitations were exceeded?

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- a) The helicopter must be inspected by a qualified engineer before the next flight
- b) The helicopter must be subjected to a duplicate inspection by two engineers
- c) The helicopter must be inspected by the pilot in command and if no defect is found, no appropriate entry in the aircraft technical log is necessary
- d) The helicopter must be inspected by at least two pilots licensed on the type, one of whom must be the pilot in command

## 59. The term "datum" with regard to a mass and balance calculation defines...

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- a) The distance from the reference plane to the center of gravity of an aircraft.
- b) The point on the longitudinal axis of an aeroplane or its extension from which the centers of gravity of all masses are referenced.
- c) The point on the vertical axis of an aeroplane or its extension from which the centers of gravity of all masses are referenced.
- d) The point on the lateral axis of an aeroplane or its extension from which the centers of gravity of all masses are referenced.

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## 60. What behaviour is shown by a rotating gyro in space?

- a) It moves in accordance with the body surrounding it
- b) It swings from east to west like a pendulum
- c) It moves in circles with a steadily decreasing radius
- d) It tends to maintain its position in space

## 61. Which altitude is displayed on the altimeter when set to a specific QFE?

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

## 62. The position of the center of gravity (including fuel) equals... See figure(PFP-053e)

ITEM	MASS	ARM
<b>Basic Empty Mass</b>	560 kg	0,35 m
<b>Pilot and Passenger</b>	150 kg	0,4 m
<b>Baggage</b>	15 kg	0,65 m
<b>Fuel</b>	60 l	0,45 m

- a) 0.403 m.
- b) 37.3 cm.
- c) 37.1 cm.
- d) 0.401 m.

## 63. What conditions are mandatory for the formation of thermal thunderstorms?

- a) Conditionally unstable atmosphere, high temperature and high humidity
- b) Absolutely stable atmosphere, high temperature and low humidity
- c) Absolutely stable atmosphere, high temperature and high humidity
- d) Conditionally unstable atmosphere, low temperature and low humidity

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## 64. The shoreline effect is greatest with radio wave propagation...

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- a) At an acute angle to the coast; aircraft below 6000 ft.
- b) At an acute angle to the coast; aircraft above 6000 ft.
- c) At a right angle to the coast; aircraft above 6000 ft.
- d) At a right angle to the coast; aircraft below 6000 ft.

## 65. Heavy downdrafts and strong wind shear close to the ground can be expected...

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- a) During approach to an airfield at the coast with a strong sea breeze.
- b) During warm summer days with high, flatted Cu clouds.
- c) Near the rainfall areas of heavy showers or thunderstorms
- d) During cold, clear nights with the formation of radiation fog.

## 66. What is the correct way of establishing radio communication between D-EAZF and Dusseldorf Tower?

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- a) DEAZF is calling Dusseldorf Tower
- b) Dusseldorf Tower over
- c) Dusseldorf Tower D-EAZF
- d) Tower from D-EAZF

## 67. Which of the following options does NOT stimulate motion sickness (disorientation)?

---

- a) Non-accelerated straight and level flight
- b) Turbulence in level flight
- c) Head movements during turns
- d) Flying under the influence of alcohol

## 68. When should turns at low altitudes above villages be avoided with regard to noise abatement procedures?

---

- a) In horizontal flight
- b) In climb
- c) In descent
- d) During the approach

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## 69. What must be considered if the alternator fails in a helicopter?

---

- a) The engine runs roughly and is prone to knocking
- b) No change as long as the battery provides enough power
- c) Only high power consumers will fail
- d) All instruments and warning systems will fail

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

---

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

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## Response Scheme

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

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