

# Exam simulation

PPL(H) - Private Pilot License - Aircraft General Knowledge



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STUDENT NAME:

DATE AND TIME:

## 01. Smoke enters the cockpit during an engine fire. Which actions have to be taken immediately?

- a) Switching off the pitot and front window heating
- b) Switching off the master switch and the ignition
- c) Switching off the heating and the ventilating system
- d) Switching off the avionics and the cabin lighting

## 02. What is the percentage of oxygen in the atmosphere at 6000 ft?

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

## 03. Which section of the flight manual describes the power required of a helicopter in a hover?

- a) Performance
- b) Limitations
- c) Normal procedures
- d) Supplements

## 04. QFE is the...

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

## 05. Why does a flare during an autorotation generate higher rotor RPM?

- a) The pitch angle increases
- b) The vertical airflow through the rotor disc increases
- c) The tangential force tilts backwards
- d) The ground effect leads to better performance

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## 06. Carbon monoxide poisoning can be caused by...

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- a) Alcohol.
- b) Unhealthy food.
- c) Smoking.
- d) Little sleep.

## 07. Which of the following frequencies is designated for VHF voice communication?

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- a) 118.75 MHz
- b) 327.25 MHz
- c) 327.25 kHz
- d) 118.75 kHz

## 08. Why is leaning the fuel mixture without an EGT indicator very dangerous in helicopters?

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- a) The risk of engine stoppage exists
- b) The risk of vapour lock in the reserve tank exists
- c) The electric fuel pump overheats
- d) The power output from the engine is growing rapidly

## 09. 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

## 10. 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

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**11. With Central European Summer Time (CEST) given as UTC+2, what UTC time corresponds to 1600 CEST?**

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- a) 1500 UTC.
- b) 1400 UTC.
- c) 1600 UTC.
- d) 1700 UTC.

**12. The movement of air flowing apart is called...**

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- a) Subsidence.
- b) Concurrence.
- c) Convergence.
- d) Divergence.

**13. A transponder with the ability to send the current pressure level is a...**

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- a) Pressure-decoder
- b) Transponder approved for airspace "B"
- c) Mode A transponder
- d) Mode C or S transponder

**14. The induced airflow on the rotor of a helicopter in level flight has the greatest value at the...**

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- a) Rear rotor area.
- b) Advancing rotor blade.
- c) Retreating rotor blade.
- d) Front rotor area.

**15. Measured pressure distribution in MSL and corresponding frontal systems are displayed by the...**

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

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**16. In flight, a little smoke emerges from behind the instrument panel. An engine fire is suspected. Which action, with respect to the pilot's operating manual, should be taken?**

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- a) Turn off the master switch
- b) Turn off the heat
- c) Shut down the engine
- d) Use the fire extinguisher

**17. Given values: Calculated take-off mass = 746 kg calculated CG = 37.1 cm fuel burn = 30.5 l on station 45 cm. Where is the CG situated after the landing?**

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- a) 37.5 cm
- b) 36.3 cm
- c) 36.9 cm
- d) 37.2 cm

**18. From which altitude on does the body usually react to the decreasing atmospheric pressure?**

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- a) 7000 feet
- b) 12000 feet
- c) 2000 feet
- d) 10000 feet

**19. Which is the purpose of the altimeter subscale?**

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- a) To set the reference level for the altitude decoder of the transponder
- b) To adjust the altimeter reading for non-standard temperature
- c) To correct the altimeter reading for system errors
- d) To reference the altimeter reading to a predetermined level such as mean sea level, aerodrome level or pressure level 1013.25 hPa

**20. Which navigation facility may be used for broadcasting the ATIS?**

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- a) NDB
- b) VOR
- c) GPS
- d) DME

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21. According to the aeronautical chart, Friesach/Hirt (LOKH) has a 707 m grass runway. Prevailing runway is 17 due to a surface wind of 18010KT. The required landing distance for your aircraft under present conditions is 550 m. Considering the NOTAM below, is it safe to plan LOKH as an alternate aerodrome? See figure (PFP-026) Siehe Anlage 9

B1066/11 NOTAMR B0680/11

Q)

LOVV/QMRCM/IV/NBO/A/000/999/4656N01426E005

E) THRESHOLD RWY17 DISPLACED 207M INWARDS  
DUE TO HIGH TREES 300M N OF RWY 17.

LANDING DISTANCE AVAILABLE (LDA) 500M.

TAKE-OFF RUN AVAILABLE (TORA) RWY 17/35

AND LANDING DISTANCE AVAILABLE (LDA)

RWY 35 707M.

MARKINGS ARE INSTALLED AT BOTH EDGES OF THE  
RUNWAY ACCORDING ZFV.

- a) No.
- b) Yes.
- c) Don't know.
- d) Maybe.

22. Using primary ground radar, the direction of the aeroplane in relation to the antenna is determined by...

- a) The orientation of the antenna.
- b) The frequency shift of the received pulse.
- c) Time measurement.
- d) The pulse pair interval.

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## 23. Which transponder code indicates a radio failure?

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

## 24. Which danger exists during engine start?

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- a) Sparking
- b) Cable fire
- c) Smoke emission
- d) Carburettor fire

## 25. Which area could be crossed with certain restrictions?

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

## 26. The occurrence of a vertigo is most likely when moving the head...

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- a) During a descent.
- b) During a turn.
- c) During a climb.
- d) During a straight horizontal flight.

## 27. The majority of aviation accidents are caused by...

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

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## 28. Why does the VNE decrease with increasing pressure altitude?

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- a) The groundspeed (GS) decreases
- b) The rotor thrust exceeds the permissible structure limitations
- c) The true airspeed (TAS) increases
- d) The tail rotor effectiveness does not provide directional stability

## 29. Which factor has a positive effect on the power required?

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- a) Unleaded fuel
- b) Clean blades
- c) Icy helicopter airframe
- d) High density altitude

## 30. The saturated adiabatic lapse rate should be assumed with a mean value of:

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- a) 0,6° C / 100 m.
- b) 2° C / 1000 ft.
- c) 1,0° C / 100 m.
- d) 0° C / 100 m.

## 31. How may windshear be recognised in flight?

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- a) Sudden and apparently baseless change of oilpressure, oil temperature, engine speed and altitude.
- b) Sudden and apparently baseless change in altitude, airspeed, rate of climb or descent.
- c) Sudden and apparently baseless change in heading, turning rate, engine speed or oil temperature.
- d) Rather unexpected onset of drizzle associated with high stratus clouds following previously clear skies and calm conditions.

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

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- a) Rivers, railroads, highways
- b) Farm tracks and creeks
- c) Border lines
- d) Two hundred eight five.

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## 33. On what frequency shall a blind transmission be made?

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

## 34. A spider control...

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- a) Feeds fuel by the rotational movement of pistons with various lengths.
- b) Prevents the overlay of collective and periodic control inputs on the main rotor.
- c) Changes the ignition timing of the magneto ignition during start-up.
- d) Changes the pitch angle of the rotor blades via an internal control rod.



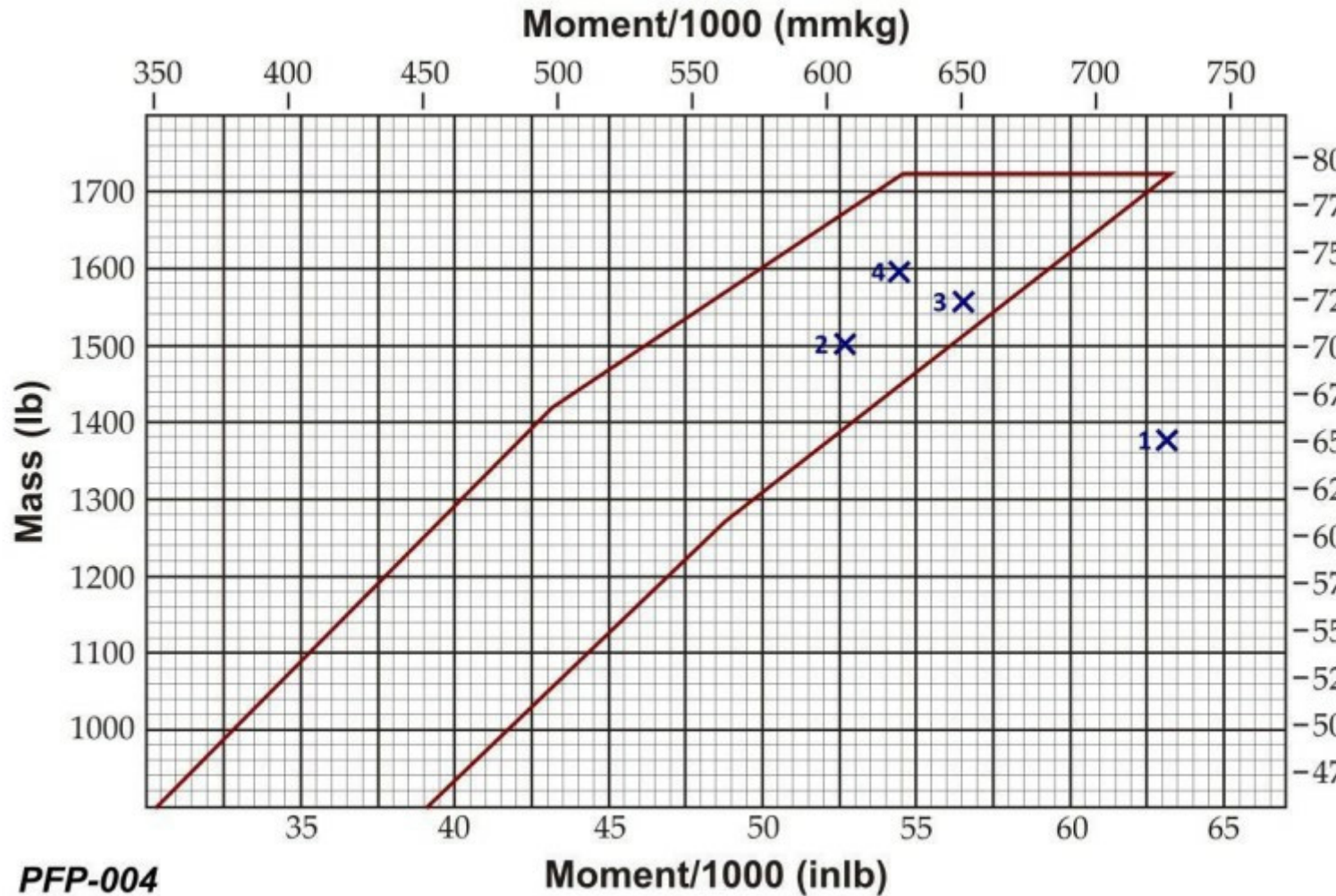
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35. For the purpose of a flight preparation the pilot calculates a total take-off mass of 725 kg and a total moment of 650 mm. Which cross marks the center of gravity (CG)? See annex (PFP-004) Siehe Anlage 4



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

36. Which weather phenomenon is typically associated with wind shear?

- a) Invernal warm front.
- b) Thunderstorms.
- c) Stable high pressure areas.
- d) Fog.

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

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

**38. 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?**

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

**39. How can wind speed and wind direction be derived from surface weather charts?**

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- a) By annotations from the text part of the chart
- b) By alignment of lines of warm- and cold fronts
- c) By alignment and distance of hypsometric lines
- d) By alignment and distance of isobaric lines

**40. 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 groundspeed (GS) equals...**

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- a) 172 kt.
- b) 155 kt.
- c) 168 kt.
- d) 159 kt

**41. Which value can the pilot derive from the tachometer?**

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- a) Airspeed of the helicopter
- b) Crankshaft or main rotor revolutions per minute
- c) Vertical speed of the helicopter
- d) Engine performance and rotor performance

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**42. What weather conditions in Central Europe are typically found in high pressure areas during summer?**

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- a) Large isobar spacing with strong prevailing westerly winds
- b) Small isobar spacing with strong prevailing northerly winds
- c) Large isobar spacing with calm winds, formation of local wind systems
- d) Small isobar spacing with calm winds, formation of local wind systems

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

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

**44. The power output of a piston engine is limited by...**

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- a) Exhaust system.
- b) Main rotor gearbox.
- c) Crankcase.
- d) Centrifugal clutch.

**45. Which information from a ground station does not require readback?**

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- a) Taxi instructions
- b) Altimeter setting
- c) Heading
- d) Traffic information

**46. Given: QDM: 134° VAR: 5° W The QTE equals...**

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- a) 314°.
- b) 129°.
- c) 309°.
- d) 299°.

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## 47. What is the meaning of "risky shift"?

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- a) Seat adjustment in flight
- b) The tendency to accept higher risks in groups
- c) Crossing of rudder and ailerons on short final
- d) Spontaneous change of landing direction when the runway has an upslope

## 48. What mass equals 102 litres of Avgas 100LL?

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

## 49. The rotor thrust is...

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- a) Perpendicular to the tip path plane.
- b) Opposite to the rotation of the rotor blade element
- c) Parallel with the main rotor shaft.
- d) Perpendicular to the hub plane.

## 50. Which of the stated materials shows the highest strength?

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- a) Aluminium
- b) Magnesium
- c) Carbon fiber re-inforced plastic
- d) Wood

## 51. What are the air masses that Central Europe is mainly influenced by?

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- a) Polar cold air and tropical warm air
- b) Arctic and polar cold air
- c) Tropical and arctic cold air
- d) Equatorial and tropical warm air

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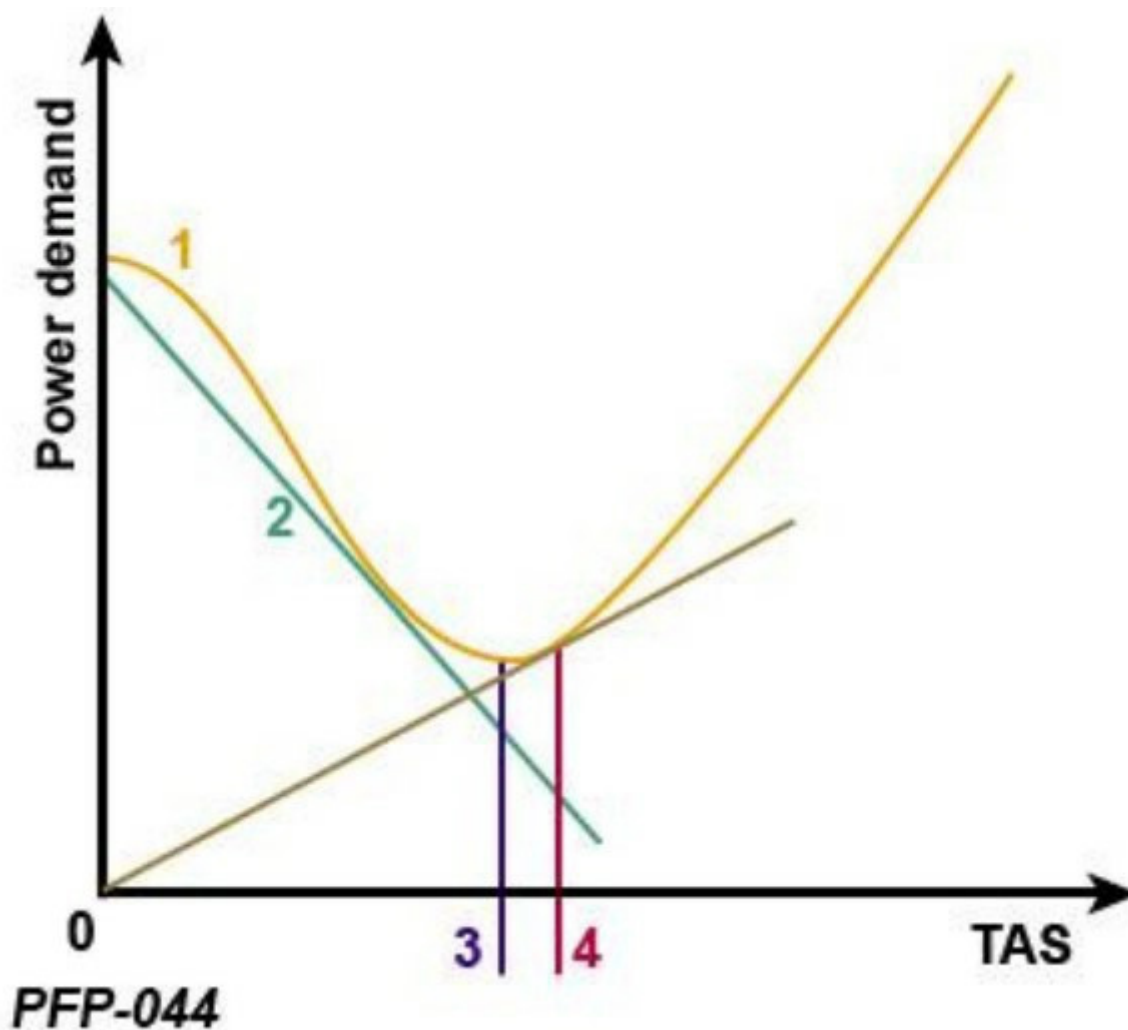


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**52. Which actions should be taken if the orientation is lost during helicopter flight operations?**

- a) Return to the departure aerodrome and reorientate from there
- b) Continue the flight in any direction until the navigation can be resumed
- c) Continue with planned heading to the next interception line and reorientate from there
- d) According the Warsaw convention orientation triangles must be flown

**53. Which point indicates the speed for maximum endurance? See figure (PFP-044) Siehe Anlage 15**



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

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## 54. What is the effect of vortex ring state?

- a) High rate of descent and irregular pitch, roll, and yaw motions
- b) Stable descent and high-frequency vibrations in the helicopter
- c) Decreased rate of descent and strong vibrations from the engine
- d) Fluctuations in rotor and engine RPM

## 55. What is shown on the printed sign? See figure (ALW-020) Siehe Anlage 2



- a) From this intersection the available runway length is 2500 m in the stated direction
- b) 2500 m in the stated direction till reaching the departure point of the runway
- c) 2500 m in the stated direction till reaching the parking area
- d) The complete length of the runway in the stated direction is 2500 m

## 56. An ATIS is valid for...

- a) 45 minutes
- b) 10 minutes.
- c) 30 minutes.
- d) 60 minutes.

## 57. Non-directional beacons (NDBs) transmit within which frequency band?

- a) Low frequency (LF) and medium frequency (MF)
- b) Very high frequency (VHF)
- c) Very low frequency (VLF) and low frequency (LF)
- d) High frequency (HF)

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**58. Radio waves within the VHF range (e.g. VOR) travel as...**

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- a) Sky wave.
- b) Sky wave and ground / surface wave.
- c) Ground / surface wave.
- d) Space wave (quasi-optical).

**59. Regarding the communication model, how can the use of the same code during radio communication be ensured?**

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- a) By a particular frequency allocation
- b) By the use of radio phraseology
- c) By using radios certified for aviation use only
- d) By the use of proper headsets

**60. How can the pitch angle on a helicopter's rotor blade be controlled?**

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- a) By electrical impulses
- b) By electric motors
- c) By control rods
- d) By cam rods

**61. Two engine-driven aircraft are flying on crossing courses at the same altitude. Which one has to divert?**

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- a) Both have to divert to the right
- b) The lighter one has to climb
- c) Both have to divert to the left
- d) The heavier one has to climb

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

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

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**63. 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

---

**64. What needs to be observed in particular when performing a slope landing?**

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- a) Direction of rotation of the main rotor
- b) Slipping of the helicopter
- c) Width of the landing skids.
- d) Faulty navigation lights.

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**65. What does the dynamic pressure depend directly on?**

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- a) Lift- and drag coefficient
- b) Air pressure and air temperature
- c) Air density and airflow speed squared
- d) Air density and lift coefficient

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**66. How often shall a blind transmission be made?**

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- a) One time
- b) Three times
- c) Two times
- d) Four times

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**67. The term "FATO" is defined as...**

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- a) A treaty between federal organizations.
- b) An area for final approach and take-off for helicopters.
- c) A noise abatement procedure for VFR traffic.
- d) A missed approach procedure for essential traffic.



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## 68. What is the function of the white blood cells (leucocytes)?

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- a) Blood coagulation
- b) Oxygen transport
- c) Immune defense
- d) Blood sugar regulation

## 69. What is the correct way of acknowledging the instruction "Next report PAH"?

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- a) Roger
- b) Report PAH
- c) Wilco
- d) Positive

## 70. What pressure pattern can be observed during the passage of a polar front low?

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- a) Falling pressure in front of the warm front, constant pressure within the warm sector, rising pressure behind the cold front
- b) Rising pressure in front of the warm front, constant pressure within the warm sector, rising pressure behind the cold front
- c) Rising pressure in front of the warm front, rising pressure within the warm sector, falling pressure behind the cold front
- d) Falling pressure in front of the warm front, constant pressure within the warm sector, falling pressure behind the cold front

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## Response Scheme

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

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