

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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STUDENT NAME:

DATE AND TIME:

01. How can a pilot confirm a search and rescue signal on ground in flight?

- a) Push the rudder in both directions multiple times
- b) Fly in a parabolic flight path multiple times
- c) Rock the wings
- d) Deploy and retract the landing flaps multiple times

02. Air traffic control service is conducted by which services?

- a) FIS (flight information service) AIS (aeronautical information service) AFS (aeronautical fixed telecommunication service)
- b) APP (approach control service) ACC (area control service) FIS (flight information service)
- c) TWR (aerodrome control service) APP (approach control service) ACC (area control service)
- d) ALR (alerting service) SAR (search and rescue service) TWR (aerodrome control service)

03. Which of the following states the working principle of an airspeed indicator?

- a) Dynamic air pressure is measured by the Pitot tube and converted into a speed indication by the airspeed indicator
- b) Total air pressure is measured by the static ports and converted into a speed indication by the airspeed indicator
- c) Total air pressure is measured and compared against static air pressure.
- d) Static air pressure is measured and compared against a vacuum.

04. During an autorotation a helicopter accelerates from 60 to 90 knots without further corrections. The rotor RPM will...

- a) Remain constant.
- b) Decrease.
- c) Vary.
- d) Increase.

05. After take-off an aeroplane gets into a wind shear with decreasing headwind. As a result...

- a) The aeroplane flies below the estimated climb path.
- b) The aeroplane flies above the estimated climb path.
- c) The ground speed (GS) will decrease.
- d) The true airspeed (TAS) will increase.

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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06. Why is a helicopter's climb initially accelerated after an increase of the pitch angle?

- a) The larger pitch angle causes a decrease and a compression of the airflow until the climb rate corresponds to the induced velocity through the main rotor disc
- b) The inertia of the air increases the effective angle of attack temporarily until an additional component of the climb rate reduces the effective angle of attack again
- c) The initially high airflow increases the rotor thrust until the lower air density reduces the rotor thrust again
- d) The conversion of energetic air into kinetic rotor energy decreases continuously with increasing density altitude

07. What danger arises for a helicopter during flight through a ground inversion in winter?

- a) Cloud formation above the inversion
- b) Baffling wind conditions
- c) Electrostatic charges
- d) Ice formation below the inversion

08. An aircraft is flying from 'A' to 'B' (distance 220 NM) at an average ground speed (GS) of 120 kt. It departs 'A' at 1200 UTC. After 70 NM along the course from 'A', the aircraft is 5 min ahead of the planned schedule. Using the actual GS, what is the revised estimated time of arrival (ETA) at B?

- a) 1330 UTC
- b) 1340 UTC
- c) 1345 UTC
- d) 1335 UTC

09. Which are the different parts of the Aeronautical Information Publication (AIP)?

- a) GEN COM MET
- b) GEN AGA COM
- c) GEN ENR AD
- d) GEN MET RAC

10. What factor may affect the top of cumulus clouds?

- a) The presence of an inversion layer
- b) Relative humidity
- c) The absolute humidity
- d) The spread

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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

- 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

12. What does the reported runway condition "DAMP" mean?

- a) A large part of the surface is flooded
- b) The runway is clear of water, ice, and snow
- c) Change of colour on the surface due to moisture
- d) Wet surface, but no significant puddles are visible

13. Given: Ground speed (GS): 160 kt. True course (TC): 177°. Wind vector (W/WS): 140°/20 kt. The true heading (TH) equals...

- a) 173°.
- b) 169°
- c) 180°.
- d) 184°.

14. A gyro which is rotating in space responds to forces being applied to it by an evasive movement...

- a) At an angle of 45° to the force being applied.
- b) In a northern direction.
- c) At an angle of 90° to the force being applied.
- d) At an angle of 180° to the force being applied.

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

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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations

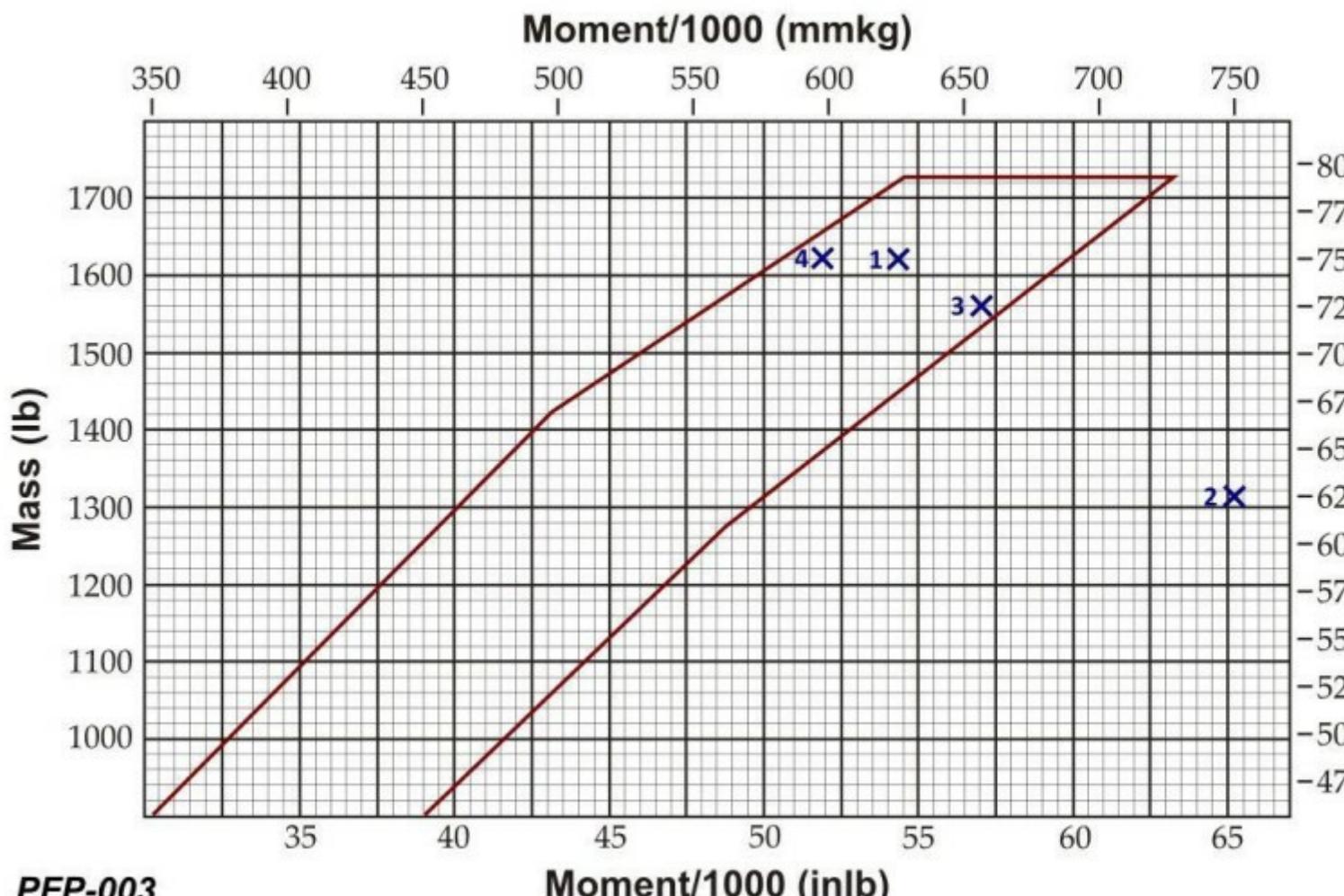


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16. Piston engines of helicopters have...

- a) One magneto ignition system.
- b) Two independent ignition systems.
- c) Two coupled ignition systems.
- d) One electrical ignition system.

17. For the purpose of a flight preparation, the pilot calculates a total take-off mass of 750 kg and a total moment of 625 inlb. Which cross marks the center of gravity (CG)? See annex (PFP-003) Siehe Anlage 3



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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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

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

19. The altimeter has to be set to what value in order to show zero on ground?

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

20. The position of the center of gravity equals... See figure (PFP-052e) Siehe Anlage 1

ITEM	MASS	ARM
Basic Empty Mass	3.156 lb	135,33 in
Front Seats	320 lb	135,50 in
Rear Seats	340 lb	177,00 in
Baggage	80 lb	248,23 in
Fuel	321,5 lb	150,31 in

- a) 142 in.
- b) 137.5 in.
- c) 147.5 in.
- d) 145.7 in.

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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21. Which phrase does a pilot use when he / she wants to check the readability of his / her transmission?

- a) Request readability
- b) What is the communication like?
- c) You read me five
- d) How do you read?

22. 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.

23. 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?

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

24. The Pitot / static system is required to...

- a) Prevent icing of the Pitot tube.
- b) Measure total and static air pressure.
- c) Correct the reading of the airspeed indicator to zero when the aircraft is static on the ground.
- d) Prevent potential static buildup on the aircraft.

25. Wings level after a longer period of turning can lead to the impression of...

- a) Starting a climb.
- b) Steady turning in the same direction as before.
- c) Starting a descent.
- d) Turning into the opposite direction.

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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26. What is an appropriate reaction when a passenger during cruise flight suddenly feels uncomfortable?

- a) Avoid conversation and choose a higher airspeed
- b) Switch on the heater blower and provide thermal blankets
- c) Give additional oxygen and avoid low load factors
- d) Adjust cabin temperature and prevent excessive bank

27. The transitional lift can be noticed by...

- a) An aural warning.
- b) Strong load factors.
- c) Vibrations.
- d) A loss of engine rpm.

28. 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.

29. What impression may be caused when approaching a runway with an upslope?

- a) A landing beside the centerline
- b) An overshoot
- c) An undershoot
- d) A hard landing

30. Leaving a control frequency (except when reaching the final parking position)...

- a) Must be approved.
- b) Is not mandatory to be reported.
- c) Must be reported
- d) Must be approved twice.

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PPL(H) - Private Pilot License - Human Performance and limitations



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31. What is the required flight time for a distance of 236 NM with a ground speed of 134 kt?

- a) 0:46 h
- b) 0:34 h
- c) 1:34 h
- d) 1:46 h

32. 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... (2,00 P.)

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

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PPL(H) - Private Pilot License - Human Performance and limitations



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33. Which is the most recently determined empty mass and the associated center of gravity (CG) arm from the aircraft documentation? See annex (PFP-006) Siehe Anlage 6

Date	Entry No.	Description of part or modification	Changes of Weight						Actual		
			Addition (+)			Subtraction (-)			Empty Weight		
			Weight [kg] ([lbs])	Arm [m] ([in.])	Moment [kgm] ([in.lbs])	Weight [kg] ([lbs])	Arm [m] ([in.])	Moment [kgm] ([in.lbs])	Weight [kg] ([lbs])	Arm [m] ([in.])	Moment [kgm] ([in.lbs])
2010	25.10.	GPS	5 kg	1,3 m	6,5 kgm				512 kg	285,39 m	1461,19 kgm
2010		10.11. ADF				6 kg	1,1 m	6,6 kgm	506 kg	284,29 m	1438,90 kgm
2011	04.03.	Left aft seat				12 kg	4,8 m	57,6 kgm	494 kg	279,49 m	1380,68 kgm
2011	06.11.	HSI	4 kg	1,1 m	4,4 kgm				498 kg	280,59 m	1397,33 kgm
PFP-006											

- a) 512 kg; 285.39 m
- b) 4 kg; 1.1 m
- c) 5 kg; 1.3 m
- d) 498 kg; 280.59 m

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

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

35. What is the parallax error?

- a) Misperception of speed during taxiing
- b) Wrong interpretation of instruments caused by the angle of vision
- c) A decoding error in communication between pilots
- d) Long-sightedness due to aging especially during night

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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36. Clouds in high layers are referred to as...

- a) Nimbo-.
- b) Strato-.
- c) Alto-.
- d) Cirro-.

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

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

38. The movement of air flowing apart is called...

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

39. At which altitude is the atmospheric pressure approximately half the MSL value (1013 hPa)?

- a) 5000 ft
- b) 18000 ft
- c) 10000 ft
- d) 22000 ft

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

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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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41. What does a cloud coverage of "BKN" mean in a METAR weather report?

- a) 3 to 4 eighths
- b) 1 to 2 eighths
- c) 8 eighths
- d) 5 to 7 eighths

42. Which optical illusion might be caused by a runway with an upslope during the approach?

- a) The pilot has the feeling that the approach is too high and therefore descents below the regular glide slope
- b) The pilot has the feeling that the approach is too low and therefore approaches the runway above the regular glide slope
- c) The pilot has the feeling that the approach is too slow and speeds up above the normal approach speed
- d) The pilot has the feeling that the approach is too fast and reduces the speed below the normal approach speed

43. The beam theory enables statements about the...

- a) Energy conversion in an autorotation.
- b) Power requirements during hover flight
- c) Transition lift close to the ground.
- d) Drag in cruise flight.

44. How does inflowing cold air affect the shape and vertical distance between pressure layers?

- a) Increase in vertical distance, lowering in height (low pressure)
- b) Decreasing vertical distance, raise in height (high pressure)
- c) Decrease in vertical distance, lowering in height (low pressure)
- d) Increasing vertical distance, raise in height (high pressure)

45. What are the variable physical properties of the atmosphere that affect the helicopter performance?

- a) Temperature, pressure, and carbon content
- b) Temperature, pressure, and humidity
- c) Pressure, humidity, and specific gravity
- d) Pressure, humidity, and nitrogen content

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



QuizVds.it

46. Wake turbulence is particularly strong...

- a) When flying with high thrust.
- b) At a high aeroplane weight.
- c) At a low aeroplane weight.
- d) When flying with low thrust.

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

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

48. What is the correct way of acknowledging the instruction "Call Hamburg Tower on 121.275"?

- a) 121.275
- b) Call 121.275
- c) Call tower
- d) Call tower on 121.275

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

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

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

- 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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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51. The balance arm is the horizontal distance between...

- a) The C.G. of a mass and the datum line.
- b) The C.G. of a mass and the rear C.G. limit.
- c) The front C.G. limit and the datum line.
- d) The front C.G. limit and the rear C.G. limit.

52. Distress messages are messages...

- 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) Sent by a pilot or an aircraft operating agency which have an imminent meaning for aircraft in flight.
- d) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance.

53. The pilot receives a QDR of 225° from the VDF ground station. Where is the aircraft located in relation to the ground station?

- a) Northwest
- b) Southeast
- c) Northeast
- d) Southwest

54. In case of an emergency ditching, the life vests have to be inflated...

- a) Before disembarking the aircraft.
- b) After disembarking the aircraft at a safe distance of about 10 m.
- c) During disembarking the aircraft.
- d) After disembarking the aircraft.

55. A vertical speed indicator measures the difference between...

- a) Instantaneous total pressure and previous total pressure.
- b) Total pressure and static pressure.
- c) Instantaneous static pressure and previous static pressure.
- d) Dynamic pressure and total pressure.

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



QuizVds.it

56. What is caused by an increase of stability in a helicopter?

- a) An optimization of the maximum helicopter mass
- b) An enhance of control under negative load factors
- c) A decrease of the required control forces
- d) An increase of general flight safety

57. A flight level is a...

- a) True altitude.
- b) Pressure altitude.
- c) Altitude above ground.
- d) Density altitude.

58. The primer is...

- a) A nozzle in the Venturi tube of a carburettor for atomising the fuel.
- b) A mechanical switch in the cockpit to engage the turbocharger.
- c) A valve in the fuel control system for automatic mixture regulation.
- d) An auxiliary pump in the fuel system to facilitate engine starting.

59. What visual flight conditions can be expected within the warm sector of a polar front low during summer time?

- a) Visibility less than 1000 m, cloud-covered ground
- b) Moderate to good visibility, scattered clouds
- c) Moderate visibility, heavy showers and thunderstorms
- d) Good visibility, some isolated high clouds

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

- 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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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61. In which outside air temperature is icing most likely?

- a) Between -15° C and 0° C
- b) Between -5° C and +20° C
- c) Between -20° C and +5° C
- d) Between -10° C and +10° C

62. The term "balance arm" in the context of a mass and balance calculation defines the...

- a) Point through which the force of gravity is said to act on a mass.
- b) Point on the longitudinal axis of an aeroplane or its extension from which the centers of gravity of all masses are referenced.
- c) Distance of a mass from the center of gravity.
- d) Distance from the datum to the center of gravity of a mass.

63. What are the minimum distances to clouds for a VFR flight in airspace "B"?

- a) Horizontally 1.000 m, vertically 1.500 ft
- b) Horizontally 1.500 m, vertically 300 m
- c) Horizontally 1.500 m, vertically 1.000 m
- d) Horizontally 1.000 m, vertically 300 m

64. The sun moves 10° of longitude. What is the difference in time?

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

65. What is the meaning of the phrase "Approved"?

- a) An error has been made in this transmission. The correct version is...
- b) I have received all of your last transmission
- c) Permission for proposed action is granted
- d) I understand your message and will comply with it

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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66. What cloud type does the picture show? See figure (MET-004). Siehe Anlage 3



- a) Stratus
- b) Altocumulus
- c) Cirrus
- d) Cumulus

67. The altimeter can be checked on the ground by setting...

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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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68. What is the best combination of traits with respect to the individual attitude and behaviour for a pilot?

- a) Extroverted - stable
- b) Introverted - unstable
- c) Extroverted - unstable
- d) Introverted - stable

69. What does the term "confirmation bias" mean?

- a) The feedback loop in a closed communication
- b) The preference to find arguments to proof the own mental model
- c) The bias to confirm each radio call
- d) The critical check of ambiguous situations in flight

70. Which of the following symptoms may indicate hypoxia?

- 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

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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Response Scheme

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

01: **C**

02: **C**

03: **C**

04: **B**

05: **A**

06: **B**

07: **D**

08: **D**

09: **C**

10: **A**

11: **D**

12: **C**

13: **A**

14: **C**

15: **D**

16: **B**

17: **A**

18: **C**

19: **A**

20: **A**

21: **D**

22: **A**

23: **A**

24: **B**

25: **D**

26: **D**

27: **C**

28: **B**

29: **B**

30: **A**

31: **D**

32: **B**

33: **D**

34: **A**

35: **B**

36: **D**

37: **B**

38: **D**

39: **B**

40: **D**

41: **D**

42: **A**

43: **B**

44: **C**

45: **B**

46: **B**

47: **A**

48: **A**

49: **C**

50: **A**

51: **A**

52: **D**

53: **D**

54: **D**

55: **C**

56: **D**

57: **B**

58: **D**

59: **B**

60: **C**

61: **B**

62: **D**

63: **B**

64: **B**

65: **C**

66: **C**

67: **C**

68: **A**

69: **B**

70: **A**

Exam simulation

PPL(H) - Private Pilot License - Human Performance and limitations



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Response form

Use this form to mark your answers

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