

Exam simulation

PPL(H) - Private Pilot License - Principles of Flight (Helicopter)



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STUDENT NAME:

DATE AND TIME:

01. What is the radial from VOR Brünkendorf (BKD) (53°02'N, 011°33'E) to Pritzwalk (EDBU) (53°11'N, 12°11'E)?



- a) 204°
- b) 024°
- c) 068°
- d) 248°

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02. 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?

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

03. 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.

04. When transmitter and receiver are moving away from each other...

- a) The perceived frequency decreases.
- b) The perceived frequency equals the transmitted frequency
- c) The perceived frequency increases.
- d) The frequency varies, but the wavelength remains constant.

05. During a flight in an air mass with a temperature equal to ISA and the QNH set correctly, the indicated altitude is...

- a) Equal to the true altitude.
- b) Lower than the true altitude.
- c) Higher than the true altitude.
- d) Equal to the standard atmosphere.

06. What should be the first action in case of a cable fire during a flight?

- a) Open the windows
- b) Turn off the master switch
- c) Close the fuel valve
- d) Open cabin ventilation

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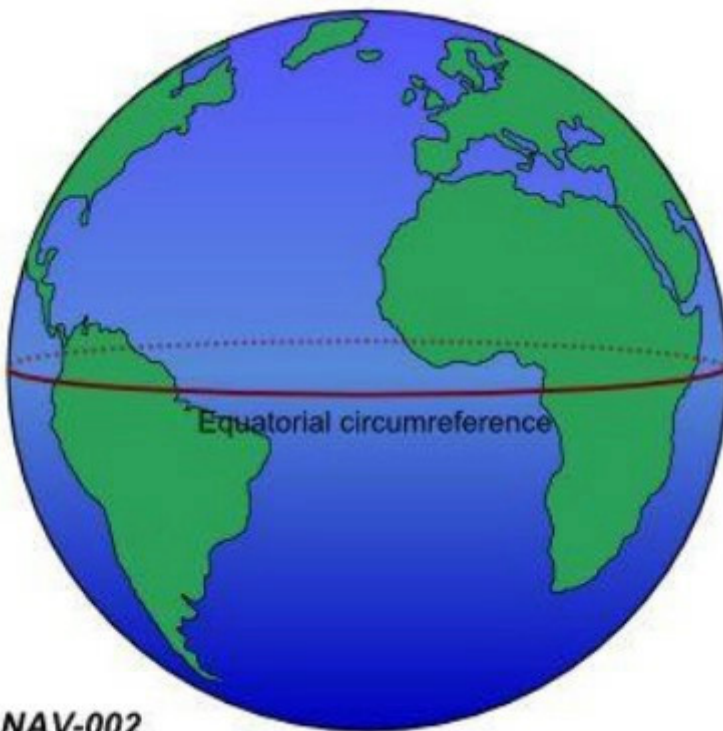
07. What is the correct way of acknowledging the instruction "Squawk 4321, Call Bremen Radar on 131.325"?

- a) Roger
- b) Wilco
- c) Squawk 4321, 131.325
- d) Squawk 4321, wilco

08. The slip indicator's ball (apparent vertical) has moved to the right during a right turn. By what actions may the ball be led back to middle position?

- a) Reduce speed, increase bank
- b) Reduce bank, increase rate of turn
- c) Reduce rate of turn, reduce bank
- d) Increase bank, increase rate of turn

09. The circumference of the Earth at the equator is approximately... See figure (NAV-002)



- a) 10800 km.
- b) 40000 NM.
- c) 12800 km.
- d) 21600 NM.

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10. What phenomenon is caused by cold air downdrafts with precipitation from a fully developed thunderstorm cloud?

- a) Anvil-head top of Cb cloud
- b) Freezing Rain
- c) Electrical discharge
- d) Gust front

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

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

12. On what frequency shall a blind transmission be made?

- 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

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

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

14. 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

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15. (For this question, please use annex PFP-061) According to ICAO, what symbol indicates a group of unlighted obstacles?



PFP-061

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

16. How do spread and relative humidity change with increasing temperature?

- a) Spread increases, relative humidity decreases
- b) Spread remains constant, relative humidity increases
- c) Spread increases, relative humidity increases
- d) Spread remains constant, relative humidity decreases

17. What process causes latent heat being released into the upper troposphere?

- a) Cloud forming due to condensation
- b) Stabilisation of inflowing air masses
- c) Descending air across widespread areas
- d) Evaporation over widespread water areas

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

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

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

- 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

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

- 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

21. Which of the following conditions are most favourable for ice accretion?

- a) Temperatures between 0° C and -12° C, presence of supercooled water droplets (clouds)
- b) Temperatures below 0° C, strong wind, sky clear of clouds
- c) Temperatures between -20° C and -40° C, presence of ice crystals (Ci clouds)
- d) Temperatures between +10° C and -30° C, presence of hail (clouds)

22. With regard to thunderstorms, strong up- and downdrafts appear during the...

- a) Initial stage.
- b) Mature stage.
- c) Dissipating stage.
- d) Thunderstorm stage.

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23. During an unaccelerated flight...

- a) The vertical component of thrust equals the horizontal component of thrust and drag equals gravity.
- b) The vertical component of thrust equals gravity and the horizontal component of thrust equals drag.
- c) The vertical component of thrust equals drag and the horizontal component of thrust equals gravity.
- d) The horizontal component of thrust equals the sum of drag and gravity.

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

- a) To mark the next available en-route airport during the flight
- b) They are used as easily recognizable guidance upon a possible loss of orientation
- c) They help to continue the flight when flight visibility drops below VFR minima
- d) To visualize the range limitation from the departure aerodrome

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

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

26. Light turbulence always has to be expected...

- a) Below cumulus clouds due to thermal convection.
- b) Above cumulus clouds due to thermal convection.
- c) When entering inversions.
- d) Below stratiform clouds in medium layers.

27. What situation may result in the occurrence of severe wind shear?

- a) Flying ahead of a warm front with visible Ci clouds
- b) Cross-country flying below Cu clouds with about 4 octas coverage
- c) During final approach, 30 min after a heavy shower has passed the airfield
- d) When a shower is visible close to the airfield

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28. The vertical speed indicator measures the difference of pressure between...

- a) The present static pressure and the static pressure of a previous moment.
- b) The present total pressure and the total pressure of a previous moment.
- c) The present dynamic pressure and the dynamic pressure of a previous moment.
- d) The present dynamic pressure and the static pressure of a previous moment.

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

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

30. Which of the following messages has the highest priority?

- a) Turn left
- b) Wind 300 degrees, 5 knots
- c) Request QDM
- d) QNH 1013

31. The range of a VOR is affected by...

- a) Daylight interference
- b) Multipath propagation of the ground wave.
- c) Reflected sky waves.
- d) Transmitter and receiver altitude.

32. 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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33. Given: QDM: 248° VAR: 10° W The QTE is...

- a) 238°.
- b) 258°.
- c) 078°.
- d) 058°.

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

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

35. When using a GPS for tracking to the next waypoint, a deviation indication is shown by a vertical bar and dots to the left and to the right of the bar. What statement describes the correct interpretation of the display?

- a) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection depends on the operating mode of the GPS.
- b) The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection is $\pm 10^\circ$.
- c) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection is ± 10 NM.
- d) The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection depends on the operating mode of the GPS.

36. Which of the following qualities are influenced by stress? 1. Attention 2. Concentration 3. Responsiveness 4. Memory

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

37. What process results in the formation of "advection fog"?

- a) Cold, moist air is being moved across warm ground areas
- b) Warm, moist air is moved across cold ground areas
- c) Prolonged radiation during nights clear of clouds
- d) Cold, moist air mixes with warm, moist air

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38. What needs to be done to compensate a tail-heavy centre of gravity in a helicopter?

- a) Remove all unnecessary attachment parts and covers
- b) Remove unneeded equipment from the cockpit
- c) Add additional fuel to the fuel tank behind the main rotor mast
- d) Add additional load in the front of the helicopter cabin

39. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are TH and VAR?

- a) TH: 194°. VAR: 004° E
- b) TH: 194°. VAR: 004° W
- c) TH: 172°. VAR: 004° W
- d) TH: 172°. VAR: 004° E

40. The average decrease of blood alcohol level for an adult in one hour is approximately...

- a) 0.3 percent
- b) 0.01 percent
- c) 0.1 percent
- d) 0.03 percent

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

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

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

- a) Rectangular blade with a geometric setting of 1°
- 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

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43. The mast bearing on the upper gearbox output acts against...

- a) Torsions.
- b) Torques.
- c) Traction and bending forces.
- d) Contact pressure.

44. Increasing a helicopter's mass will...

- a) Increase the climb path angle.
- b) Decrease the rate of climb.
- c) Increase the lift coefficient.
- d) Decrease the power available.

45. 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

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

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

47. 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.

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48. The term "flight time" is defined as...

- 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.

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

- a) It is the smallest by using an advance angle of 90°
- 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

50. Distress messages contain...

- a) Information concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance
- b) Information concerning urgent spare parts which are required for a continuation of flight and which have to be ordered in advance.
- c) Information concerning the apron personell and which imply an imminent danger to landing aircraft.
- d) Information concerning the safety of an aircraft, a watercraft or some other vehicle or person in sight.

51. Fading in LF/MF frequency range occurs mainly...

- a) During the night.
- b) In the late afternoon.
- c) At midday.
- d) In the daytime.

52. 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

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53. Which area is suitable for an off-field landing?

- a) Glade with long dry grass
- b) Sports area in a village
- c) Harvested cornfield
- d) Plowed field

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

P6		P7		P8	P9	P9	P10	
NAV-014		Wind W/V		rwk	L	rwSK	MW	mwSK
VE	Wind W/WS							
TAS	Richtung	Geschw.	TC	WCA	TH	VAR	MH	
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: 173°. MH: 184°. MC: 178°
- b) TH: 185°. MH: 185°. MC: 180°
- c) TH: 173°. MH: 174°. MC: 178°
- d) TH: 185°. MH: 184°. MC: 178°

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55. Information about pressure patterns and frontal situation can be found in which chart?

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

56. The compass error caused by the aircraft's magnetic field is called...

- a) Deviation.
- b) Declination.
- c) Inclination.
- d) Variation.

57. The basic empty mass of an aircraft includes...

- 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.

58. During an autorotation with forward speed of a helicopter the driving forces are located in the...

- a) Region of the retreating rotor blade
- b) Inner region
- c) Outer region
- d) Region of the advancing rotor blade

59. The barometric altimeter with QNH setting indicates...

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

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60. A landing conducted in response to circumstances forcing the aircraft to land is a / an...

- a) Urgent landing.
- b) Precautionary landing.
- c) Field or out landing.
- d) Emergency landing.

61. 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

62. 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

63. 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, 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

64. An aircraft travels 110 NM within 01:25. The ground speed (GS) equals...

- a) 86 kt
- b) 78 kt
- c) 160 km/h
- d) 120 km/h

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65. During an autorotation the airspeed is limited by...

- a) The displacement of the stall regions in the inner area of the rotor blade
- b) The interference drag during low rates of descent
- c) The landing gear during the touchdown
- d) The drift of the driving forces on the returning blade

66. Electronic devices on board of an aeroplane have influence on the...

- a) Direct reading compass.
- b) Airspeed indicator.
- c) Artificial horizon.
- d) Turn coordinator.

67. What frontal line divides subtropical air from polar cold air, in particular across Central Europe?

- a) Polar front
- b) Occlusion
- c) Warm front
- d) Cold front

68. Which gas is most dangerous during an engine fire?

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

69. 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

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70. A single-engine piston and a turboprop aeroplane are approaching each other opposite at the same altitude. Which aeroplane has to change its track to avoid a collision?

- a) Both aircraft have to alter their tracks to the left
- b) The turboprop aircraft has to give way to the single-engine piston aircraft
- c) The single-engine piston aircraft has to give way to the turboprop aircraft
- d) Both aircraft have to alter their tracks to the right

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Response Scheme

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

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

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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: _____		