

Exam simulation

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



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STUDENT NAME:

DATE AND TIME:

01. The indication of a magnetic compass deviates from magnetic north direction due to what errors?

- a) Gravity and magnetism
- b) Deviation, turning and acceleration errors
- c) Inclination and declination of the earth's magnetic field
- d) Variation, turning and acceleration errors

02. What has to be considered when starting the engine in a strong wind condition?

- a) The rotor brake should not be released before the engine runs with sufficient RPM.
- b) The cyclic stick should be taken backwards and the collective pitch should be raised.
- c) The mixture should be leaned and the carburettor heat fully pulled.
- d) The helicopter should be aligned with its longitudinal axis in the wind.

03. The term "inclination" is defined as...

- a) Angle between magnetic and true north.
- b) Deviation induced by electrical fields.
- c) Angle between airplane's longitudinal axis and true north.
- d) Angle between earth's magnetic field lines and horizontal plane.

04. What does the octane rating or fuel grade describe?

- a) Flame front speed
- b) Anti-knock rating
- c) Combustion temperature
- d) Ignition timing

05. A delta-three hinge is used to allow...

- a) For a decreased pitch angle at an upwards flapping blade
- b) The advancing blade to flap up about the hinge
- c) The advancing blade to lead about the hinge
- d) The advancing blade to drag about the hinge

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06. The ground effect is noticeable by...

- a) Strong vertical oscillations
- b) Strong horizontal vibrations
- c) Larger power requirements
- d) Lower power requirements

07. Which instrument can be affected by the hysteresis error?

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

08. Which section of the flight manual describes the centre of gravity limitations of a helicopter?

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

09. Vienna (LOWW) is located at 016° 34'E, Salzburg (LOWS) at 013° 00'E. The latitude of both positions can be considered as equal. What is the difference of sunrise and sunset times, expressed in UTC, between Wien and Salzburg?

- a) In Vienna the sunrise and sunset are about 14 minutes earlier than in Salzburg
- b) In Vienna the sunrise is 4 minutes later and sunset is 4 minutes earlier than in Salzburg
- c) In Vienna the sunrise and sunset are about 4 minutes later than in Salzburg
- d) In Vienna the sunrise is 14 minutes earlier and sunset is 14 minutes later than in Salzburg

10. What is the call sign of the flight information service?

- a) Advice
- b) Flight information
- c) Info
- d) Information

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

- 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

12. Which is the colour of runway end lights?

- a) White
- b) Red
- c) Blue
- d) Green

13. 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

14. Which validity does the "Certificate of Airworthiness" have?

- a) 12 years
- b) Unlimited
- c) 6 months
- d) 12 months

15. After lift-off, a much stronger than expected airspeed rise is experienced during the initial climb phase. What may be expected if the aeroplane entered a microburst?

- a) A decreased climb rate and airspeed
- b) An increased climb rate and decreased airspeed
- c) A decreased climb rate and increased airspeed
- d) An increased climb rate and airspeed

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16. The barometric altimeter with QFE setting indicates...

- 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.

17. The airspeed indicator is unserviceable. The airplane may only be operated...

- a) If no maintenance organisation is around.
- b) When the airspeed indicator is fully functional again.
- c) When a GPS with speed indication is used during flight.
- d) If only airfield patterns are flown.

18. Given: True course: 255°. TAS: 100 kt. Wind: 200°/10 kt. The true heading equals...

- a) 250°
- b) 265°
- c) 275°
- d) 245°

19. An aircraft is flying at a pressure altitude of 7000 feet with an outside air temperature (OAT) of +11°C. The QNH altitude is 6500 ft. The true altitude equals...

- a) 6750 ft.
- b) 7000 ft
- c) 6500 ft
- d) 6250 ft.

20. 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

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21. The angle between compass north and magnetic north is called...

- a) Variation
- b) WCA
- c) Deviation
- d) Inclination

22. Which kind of engine is susceptible to carburettor fire?

- a) Turboprop engines
- b) Turbine engines
- c) Piston engines
- d) Electric motors

23. The position of the center of gravity equals... See figure (PFP-052e)

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.

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24. What allows the removal of drag hinges in semi-rigid rotor systems?

- a) Use of a gimbal ring with central flapping hinge
- b) Geometric or aerodynamic twist of the rotor blades
- c) Additional cone hinges on the rotor head
- d) Rotor blade attachment below the central flapping hinge

25. In which way should a pilot confirm received light signals in flight?

- a) Rock the wings (in the daytime)
- b) Apply some changes of RPM
- c) Apply some fast pitch changes
- d) Apply some changes of the rudder

26. According to ICAO Annex 14, which is the colour marking of a runway?

- a) Green
- b) White
- c) Blue
- d) Yellow

27. A Pre-Flight Information Bulletin (PIB) is a presentation of current...

- a) ICAO information of operational significance prepared after the flight.
- b) NOTAM information of operational significance prepared prior to flight.
- c) AIC information of operational significance prepared after the flight.
- d) AIP information of operational significance prepared prior to flight.

28. How are two parallel runways designated?

- a) The left runway gets the suffix "L", the right runway remains unchanged
- b) The left runway gets the suffix "-1", the right runway "-2"
- c) The left runway remains unchanged, the right runway designator is increased by 1
- d) The left runway gets the suffix "L", the right runway "R"

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29. Given: QDR: 067° VAR: 5° E The QDM equals...

- a) 072°
- b) 247°
- c) 257°
- d) 252°

30. What might be the reason for scratches on the tail stringer?

- a) Old colour
- b) Intense erosion
- c) Rotor blade contact
- d) Contact with ground

31. Which abbreviation is used for the term "abeam"?

- a) ABM
- b) ABE
- c) ABA
- d) ABB

32. 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.

33. Extensive high pressure areas can be found throughout the year ...

- a) Over oceanic areas at latitudes around 30°N/S.
- b) In areas showing extensive lifting processes.
- c) In tropical areas, close to the equator.
- d) In mid latitudes along the polar front

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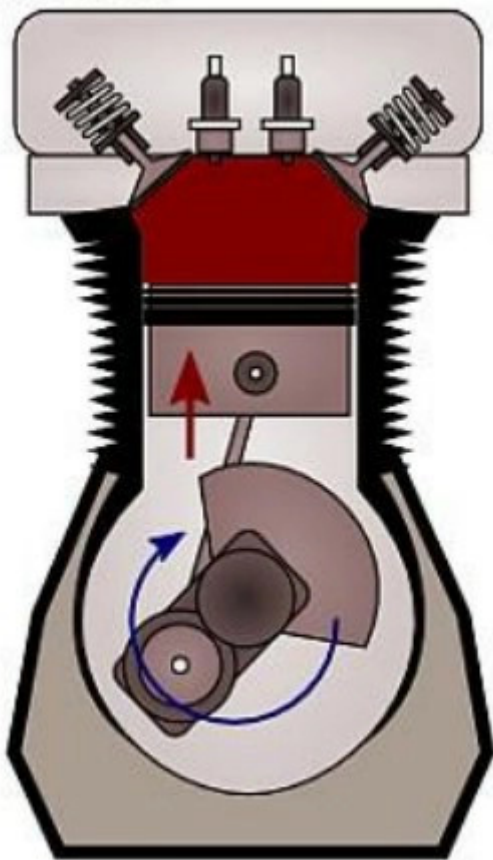


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34. Which option describes the term "asymmetric airflow"?

- a) During cruise flight the advancing rotor blade has more airflow than the retreating rotor blade
- b) The displacement of the driving forces to the advancing rotor blade in a vertical autorotation
- c) The difference in required performance during hover in and out of ground effect
- d) The greater lift in the outer region of the rotor as opposed to the inner region

35. Which part of the cycle of a four-stroke Otto engine can be seen in the attachment? See figure (AGK-008)



- a) Second stroke - compression
- b) First stroke - induction
- c) Third stroke - power
- d) Fourth stroke - exhaust

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36. Why are all the connecting flanges of the main shaft designed flexible?

- a) To compensate for thermal stresses and installation errors
- b) For the distribution of pressure and tensile forces
- c) To have a predetermined breaking point for engine damage
- d) For the frictional connection to the main rotor gearbox

37. What is the minimum flight visibility in airspace "C" at and above FL 100 for an aircraft operating under VFR?

- a) 1.5 km
- b) 10 km
- c) 8 km
- d) 5 km

38. 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

39. 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

40. How do dew point and relative humidity change with decreasing temperature?

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

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41. 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

42. 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.

43. Which equipment is needed on board of an aircraft to receive signals from a nondirectional beacon (NDB)?

- a) Horizontal situation indicator (HSI)
- b) Secondary surveillance radar (SSR)
- c) Automatic direction finder (ADF)
- d) Course deviation indicator (CDI)

44. What is the minimum flight visibility in airspace "C" below FL 100 for an aircraft operating under VFR?

- a) 5 km
- b) 10 km
- c) 8 km
- d) 1.5 km

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

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

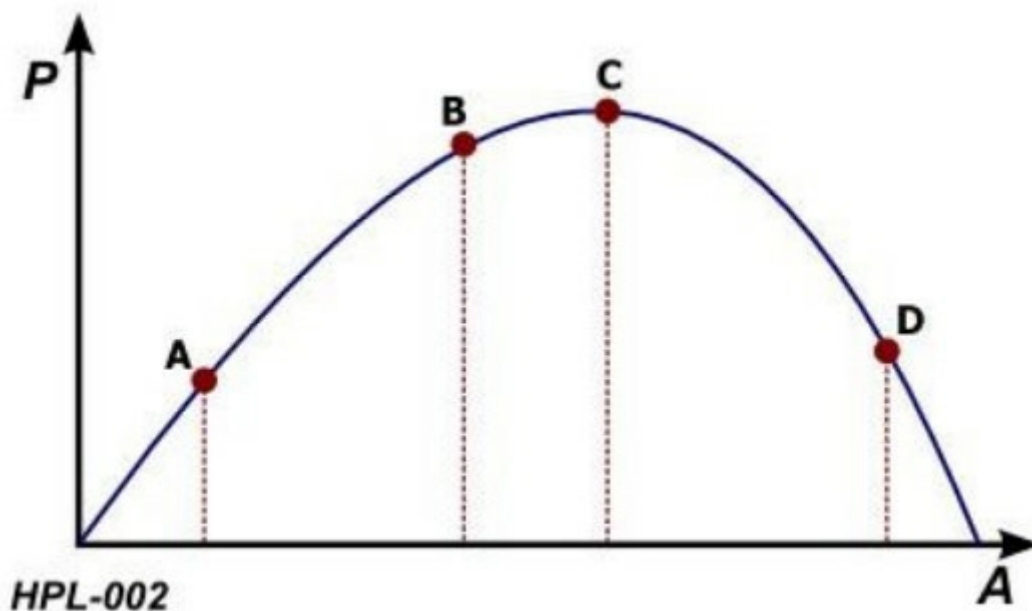
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46. At which point in the diagram will a pilot find himself to be overstrained? See figure (HPL-002) P = Performance
A = Arousal / Stress



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

47. The term 'agonic line' is defined as a line on Earth or an aeronautical chart, connecting all points with the...

- a) Heading of 0°
- b) Inclination of 0°
- c) Variation of 0°
- d) Deviation of 0°

48. The maximum endurance with a helicopter is achieved by flying at...

- a) A lower speed than for maximum range and at the lowest altitude that is safely possible.
- b) The same speed as for maximum range and at optimum height.
- c) A lower speed than for maximum range and at the service ceiling.
- d) A higher speed than for maximum range and at the lowest altitude that is safely possible.

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49. SIGMET warnings are issued for...

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

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

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

51. 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

52. What is the meaning of the abbreviation "TRA"?

- a) Transponder Area
- b) Temporary Reserved Airspace
- c) Terminal Area
- d) Temporary Radar Routing Area

53. The VFR semicircular rules are based on the...

- a) Magnetic course (MC).
- b) True heading (TH).
- c) True course (TC).
- d) Magnetic heading (MH).

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54. In which situations should a pilot use blind transmissions?

- a) When the traffic situation at an airport allows the transmission of information which does not need to be acknowledged by the ground station
- b) When a pilot has flown into cloud or fog unintentionally and therefore would like to request navigational assistance from a ground unit
- c) When no radio communication can be established with the appropriate aeronautical station, but when evidence exists that transmissions are received at that ground unit
- d) When a transmission containing important navigational or technical information is to be sent to several stations at the same time

55. The rotor thrust is...

- 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

56. 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°.

57. 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.

58. A pilot can contact FIS (flight information service)...

- a) Via telephone.
- b) Via internet.
- c) Via radio communication.
- d) By a personal visit.

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59. Given: TC: 183°; WCA: +011°; MH: 198°; CH: 200° What are the TH and the DEV?

- a) TH: 194°. DEV: -002°.
- b) TH: 172°. DEV: +002°.
- c) TH: 194°. DEV: +002°
- d) TH: 172°. DEV: -002°.

60. The VDF range depends on...

- a) The condition of the ionosphere.
- b) The aircraft's speed.
- c) The range of the ground / surface wave.
- d) The aircraft's altitude.

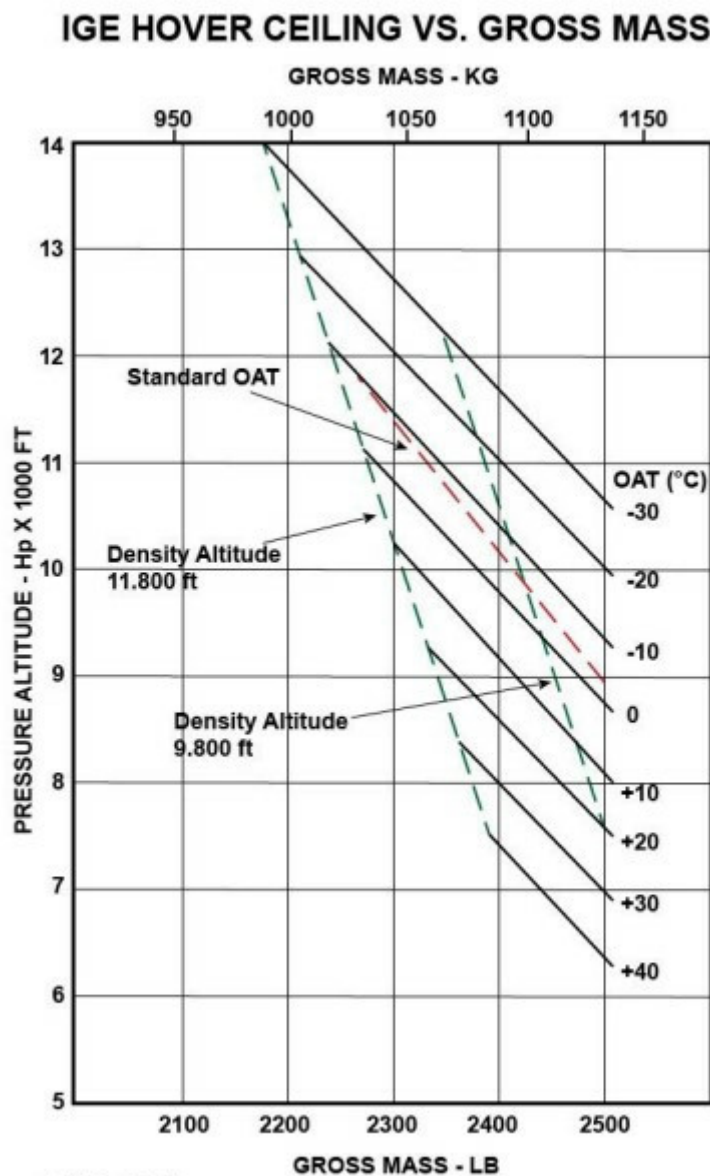
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61. What is the maximum pressure altitude to conduct a hover in ground effect if the helicopter mass equals 2400 lbs and the outside air temperature is +20° C? See annex (PFP-045)



PFP-045

- a) 9000 ft
- b) 11000 ft
- c) 9500 ft
- d) 8600 ft

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62. May an engine, which previously was on fire, be restarted?

- a) Yes, but only if the cause of the fire was a carburettor fire during engine start
- b) Yes, but only on the ground for the purpose of taxiing
- c) No, the risk of a reignition of the fire would be too high
- d) Yes, if the aircraft is flying at a safe altitude

63. An increase of stability in a helicopter causes...

- a) A decrease of general aviation safety
- b) A reduced controllability
- c) An optimization of the maximum helicopter mass
- d) An enhancement of control under negative load factors

64. Which of the following is NOT a symptom of hyperventilation?

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

65. 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.

66. What is the correct way to transmit the call sign OE-JVK?

- a) Oscar Echo Jankee Victor Kilogramm
- b) Omega Echo Juliett Victor Kilogramm
- c) Omega Echo Jankee Victor Kilo
- d) Oscar Echo Juliett Victor Kilo

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67. The temperature lapse rate with increasing height within the troposphere according ISA is...

- a) 3° C / 100 m.
- b) 0.65° C / 100 m.
- c) 0.6° C / 100 m.
- d) 1° C / 100 m.

68. What information is NOT found on Low-Level Significant Weather Charts (LLSWC)?

- a) Information about icing conditions
- b) Information about turbulence areas
- c) Front lines and frontal displacements
- d) Radar echos of precipitation

69. What is the correct term for an involuntary and stereotypical reaction of an organism to the stimulation of a receptor?

- a) Reflex
- b) Coherence
- c) Virulence
- d) Reduction

70. If the critical angle of attack is exceeded, the...

- 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

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Response Scheme

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

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

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Response form

Use this form to mark your answers

01: _____	02: _____	03: _____	04: _____
05: _____	06: _____	07: _____	08: _____
09: _____	10: _____	11: _____	12: _____
13: _____	14: _____	15: _____	16: _____
17: _____	18: _____	19: _____	20: _____
21: _____	22: _____	23: _____	24: _____
25: _____	26: _____	27: _____	28: _____
29: _____	30: _____	31: _____	32: _____
33: _____	34: _____	35: _____	36: _____
37: _____	38: _____	39: _____	40: _____
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: _____		