

Exam simulation

SPL - Sailplane Pilot License - Meteorology



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STUDENT NAME:

DATE AND TIME:

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

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

02. The saturated adiabatic lapse rate is...

- a) Equal to the dry adiabatic lapse rate.
- b) Higher than the dry adiabatic lapse rate.
- c) Proportional to the dry adiabatic lapse rate.
- d) Lower than the dry adiabatic lapse rate.

03. The correct transponder code for emergencies is...

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

04. The total weight of an aeroplane is acting vertically through the...

- a) Stagnation point.
- b) Center of pressure.
- c) Neutral point.
- d) Center of gravity

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

- a) Power lines
- b) Farm tracks and creeks
- c) Border lines
- d) Rivers, railroads, highways

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06. How do lift and drag change when approaching a stall condition?

- a) Lift decreases and drag increases
- b) Lift and drag increase
- c) Lift increases and drag decreases
- d) Lift and drag decrease

07. The height of the tropopause of the International Standard Atmosphere (ISA) is at...

- a) 36000 ft.
- b) 5500 ft
- c) 48000 ft.
- d) 11000 ft.

08. During flight you have to solve a problem, how to you proceed?

- a) There is no time for solving problems during flight
- b) Solve problem immediately, otherwise refer to the operationg handbook
- c) Contact other pilot via radio for help, keep flying
- d) Primarily fly the airplane and keep it stable, then attend to the problem and keep flying the airplane

09. What is the advantage of differential aileron movement?

- a) The drag of the downwards deflected aileron is lowered and the adverse yaw is smaller
- b) The total lift remains constant during aileron deflection
- c) The ratio of the drag coefficient to lift coefficient is increased
- d) The adverse yaw is higher

10. Which phrase is to be repeated three times before transmitting an urgency message?

- a) Mayday
- b) Urgent
- c) Pan Pan
- d) Help

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

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

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

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

13. Distress messages contain...

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

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14. (For this question, please use annex PFP-061) According ICAO, what symbol indicates a group of unlighted obstacles? (2,00 P.) Siehe Anlage 4

- A
- B
- C
- D

PFP-061

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

15. What does a cloud coverage of "SCT" mean in a METAR weather report?

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

16. What has to be expected with ice accretion on wings?

- a) An increased stall speed
- b) A decreased stall speed
- c) Improved slow flight capabilities
- d) Reduced friction drag

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17. What information can be found in the ATIS, but not in a METAR?

- a) Operational information such as runway in use and transition level
- b) Information about current weather, for example types of precipitation
- c) Approach information, such as ground visibility and cloud base
- d) Information about mean wind speeds, maximum speeds in gusts if applicable

18. 5500 m equal...

- a) 18000 ft.
- b) 30000 ft.
- c) 7500 ft.
- d) 10000 ft.

19. What is the function of the static rudder balance?

- a) To prevent control surface flutter
- b) To trim the controls almost without any force
- c) To increase the control stick forces
- d) To limit the control stick forces

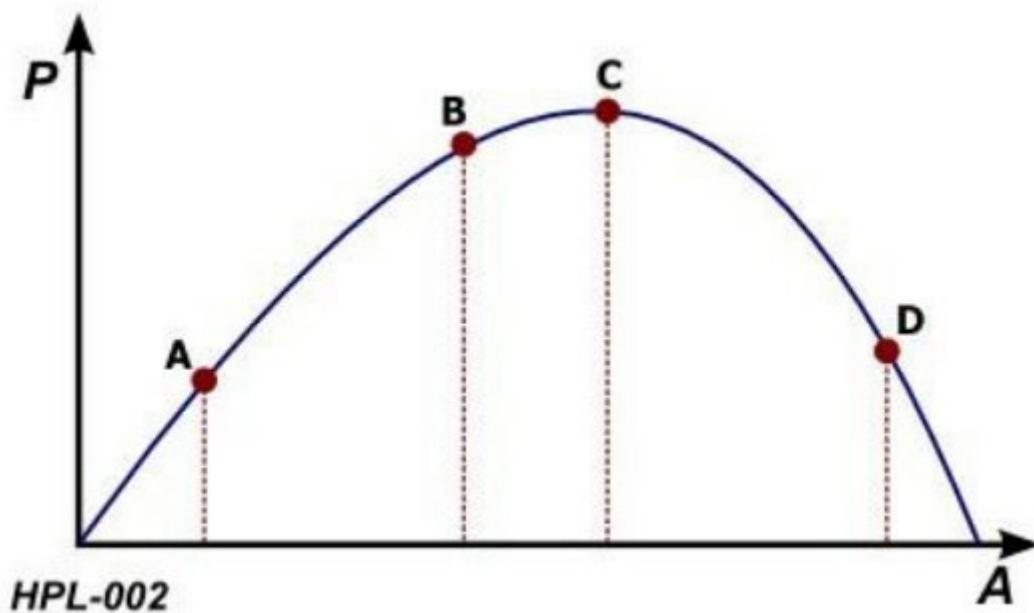
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20. The ideal level of arousal is at which point in the diagram? See figure (HPL- 002) P = Performance A = Arousal / Stress Siehe Anlage 1



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

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

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

22. The center of gravity (CG) defines...

- a) The product of mass and balance arm
- b) The point on the longitudinal axis or its extension from which the centers of gravity of all masses are referenced.
- c) The point on the longitudinal axis or its extension from which the centers of gravity of all masses are referenced.
- d) The point through which the force of gravity is said to act on a mass.

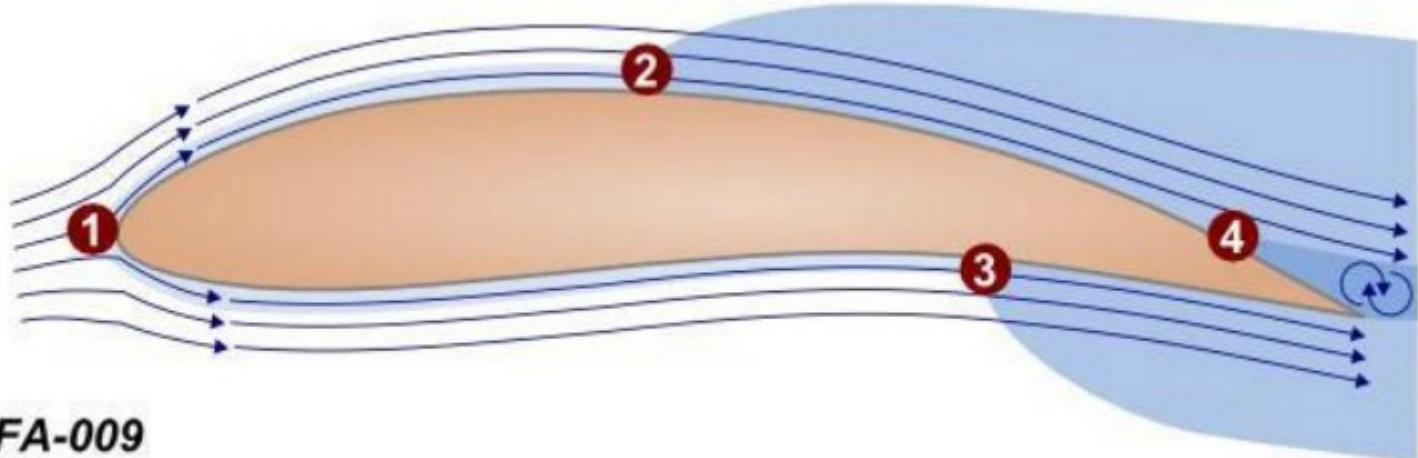
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23. Which point on the aerofoil is represented by number 3? See figure (PFA-009) Siehe Anlage 2



PFA-009

- a) Stagnation point
- b) Separation point
- c) Center of pressure
- d) Transition point

24. Rotation around the lateral axis is called...

- a) Yawing.
- b) Pitching.
- c) Rolling.
- d) Stalling.

25. A heading of 285 degrees is correctly transmitted as...

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

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26. Which air traffic service is responsible for the safe conduct of flights?

- a) ATC (air traffic control)
- b) AIS (aeronautical information service)
- c) ALR (alerting service)
- d) FIS (flight information service)

27. What is the function of the blood platelets (thrombocytes)?

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

28. Weather and operational information about the destination aerodrome can be obtained during the flight by...

- a) PIREP
- b) SIGMET
- c) ATIS.
- d) VOLMET.

29. How does air temperatur change in ISA from MSL to approx. 10.000 m height?

- a) From +30° to -40°C
- b) From +20° to -40°C
- c) From -15° to 50°C
- d) From +15° to -50°C

30. Pressure drag, interference drag and friction drag belong to the group of the...

- a) Parasite drag
- b) Main resistance.
- c) Induced drag.
- d) Total drag.

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31. Complacency is a risk due to...

- a) Increased cockpit automation.
- b) The high error rate of technical systems.
- c) The high number of mistakes normally made by humans.
- d) Better training options for young pilots.

32. 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) Deviation of 0°.
- c) Inclination of 0°.
- d) Variation of 0°.

33. 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?

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

34. Despite several attempts, the landing gear can be extended, but not locked. How should the landing be conducted?

- a) Keep gear unlocked and perform normal landing
- b) Keep a firm grip on gear handle during normal landing
- c) Retract landing gear and perform belly landing with minimum speed
- d) Retract gear and perform belly landing with increased speed

35. Given: True course: 270°. TAS: 100 kt. Wind: 090°/25 kt. Distance: 100 NM. The ground speed (GS) equals...

- a) 120 kt.
- b) 131 kt.
- c) 117 kt.
- d) 125 kt.

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

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

37. A wind shear is...

- a) A wind speed change of more than 15 kt.
- b) A meteorological downslope wind phenomenon in the alps.
- c) A vertical or horizontal change of wind speed and wind direction.
- d) A slow increase of the wind speed in altitudes above 13000 ft.

38. How can you determine wind direction in case of an outlanding?

- a) Monitoring of smoke, flags, waving fields
- b) Wind forecast from flight weather report
- c) Request from other pilots who can be reached by radio
- d) Remembering the wind indicated by the windsock at departing airfield

39. How are rhumb lines and great circles depicted on a direct Mercator chart?

- a) Rhumb lines: straight lines Great circles: curved lines
- b) Rhumb lines: straight lines Great circles: straight lines
- c) Rhumb lines: curved lines Great circles: straight lines
- d) Rhumb lines: curved lines Great circles: curved lines

40. Which answer is correct concerning stress?

- a) Everybody reacts to stress in the same manner
- b) Stress and its different symptoms are irrelevant for flight safety
- c) Stress can occur if there seems to be no solution for a given problem
- d) Training and experience have no influence on the occurrence of stress

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41. During initial winch launch, one wing of a glider plane gets ground contact. What action should be taken by the glider pilot?

- a) Pull the elevator
- b) Decouple cable immediately
- c) Rudder in opposite direction
- d) Ailerons in opposite direction

42. Urgency messages are messages...

- a) Sent by a pilot or an aircraft operating agency which have an imminent meaning for aircraft in flight
- b) Concerning aircraft and their passengers which face a grave and imminent threat and require immediate assistance.
- c) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation.
- d) Concerning the operation or maintenance of facilities essential for the safety or regularity of aircraft operation.

43. Which constructive feature has the purpose to reduce steering forces?

- a) T-tail
- b) Differential aileron deflection
- c) Vortex generators
- d) Aerodynamic rudder balance

44. When airtowing using side-located latch, the gliding plane tends to...

- a) Show particularly stable flight characteristics.
- b) Quickly turn around longitudinal axis
- c) Show enhanced pitch up moment.
- d) Show enhanced turn to latch-mounted side.

45. 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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46. At stationary glide and the same mass, what is the difference when using a thick airfoil instead of a thinner airfoil?

- a) More drag, same lift
- b) Less drag, less lift
- c) More drag, less lift
- d) Less drag, same lift

47. Flying slow close to stall conditions, the left wing is lower than the right wing. How can the stall be prevented?

- a) Push on the elevator, keep wings level with coordinated inputs on rudder and aileron
- b) Aileron and rudder to the right, gain some speed, push slightly on the elevator, all rudders neutral
- c) Aileron to the right, push slightly on the elevator, gain some speed, all rudders neutral
- d) Rudder left, push slightly on the elevator, gain some speed, all rudders neutral

48. What phenomenon is referred to as "blue thermals"?

- a) Thermals with less than 4/8 Cu coverage
- b) Descending air between Cumulus clouds
- c) Turbulence in the vicinity of Cumulonimbus clouds
- d) Thermals without formation of Cu clouds

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

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

50. How many satellites are necessary for a precise and verified three-dimensional determination of the position?

- a) Two
- b) Three
- c) Five
- d) Four

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51. Two aircraft of the same type, same grossweight and same configuration fly at different airspeeds. Which aircraft will cause more severe wake turbulence?

- a) The aircraft flying at lower altitude.
- b) The aircraft flying at higher speed.
- c) The aircraft flying at higher altitude
- d) The aircraft flying at slower speed

52. During an approach the aeroplane experiences a windshear with an increasing headwind. 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 higher, IAS increases
- d) Path is lower, IAS decreases

53. An aeroplane has a heading of 090°. The distance which has to be flown is 90 NM. After 45 NM the aeroplane is 4.5 NM north of the planned flight path. What is the corrected heading to reach the arrival aerodrome directly?

- a) 18° to the right
- b) 9° to the right
- c) 6° to the right
- d) 12° to the right

54. The term "center of gravity" is defined as...

- a) Another designation for the neutral point.
- b) The heaviest point on an aeroplane.
- c) Half the distance between the neutral point and the datum line.
- d) Half the distance between the neutral point and the datum line.

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

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

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56. The trim wheel or lever in the cockpit is moved aft by the pilot. What effect does this action have on the trim tab and on the elevator?

- a) The trim tab moves up, the elevator moves down
- b) The trim tab moves down, the elevator moves up
- c) The trim tab moves up, the elevator moves up
- d) The trim tab moves down, the elevator moves down

57. What has to be consider when overflying mountain ridges?

- a) Turbulences, reduce to minimum speed
- b) Do not overfly national parks
- c) Turbulences, therefore slightly increase speed
- d) Use circling birds to find thermal cells

58. The term "static pressure" is defined as pressure...

- a) Inside the airplane cabin.
- b) Of undisturbed airflow
- c) Resulting from orderly flow of air particles.
- d) Sensed by the pitot tube.

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

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

60. During a winch launch, just after stabilizing full climb attitude, the pull on cable suddenly stops. What action should be taken by the glider pilot?

- a) Push slightly, wait for pull on cable to be re-established
- b) Inform winch driver by alternate aileron input
- c) Push firmly and decouple cable immediately
- d) Pull on elevator to increase cable tension

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61. Which statement is correct with regard to the polar axis of the Earth?

- a) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is perpendicular to the plane of the equator
- b) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is at an angle of 66.5° to the plane of the equator
- c) The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is at an angle of 23.5° to the plane of the equator
- d) The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is perpendicular to the plane of the equator

62. 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° left.
- b) 7° right.
- c) 3° right.
- d) 3° left.

63. The center of gravity has to be located...

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

64. Which phrase is used by a pilot when he wants to fly through controlled airspace?

- a) Want
- b) Apply
- c) Would like
- d) Request

65. The distance between the center of gravity and the datum is called...

- a) Lever.
- b) Torque.
- c) Span width.
- d) Balance arm.

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66. The character of an air mass is given by what properties?

- a) Wind speed and tropopause height
- b) Environmental lapse rate at origin
- c) Region of origin and track during movement
- d) Temperatures at origin and present region

67. Which of the stated materials shows the highest strength?

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

68. During a stall, the lift...

- a) Decreases and drag increases.
- b) Increases and drag increases.
- c) Decreases and drag decreases
- d) Increases and drag decreases.

69. If surrounded by airflow ($v > 0$), any arbitrarily shaped body produces...

- a) Drag and lift.
- b) Drag.
- c) Lift without drag.
- d) Constant drag at any speed.

70. The "swiss cheese model" can be used to explain the...

- a) State of readiness of a pilot.
- b) Procedure for an emergency landing.
- c) Optimal problem solution.
- d) Error chain.

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Response Scheme

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

01: **A**

02: **D**

03: **C**

04: **D**

05: **D**

06: **A**

07: **A**

08: **D**

09: **A**

10: **C**

11: **D**

12: **C**

13: **D**

14: **D**

15: **C**

16: **A**

17: **A**

18: **A**

19: **A**

20: **A**

21: **A**

22: **D**

23: **D**

24: **B**

25: **C**

26: **A**

27: **D**

28: **C**

29: **D**

30: **A**

31: **A**

32: **D**

33: **B**

34: **C**

35: **D**

36: **C**

37: **C**

38: **A**

39: **A**

40: **C**

41: **B**

42: **D**

43: **D**

44: **C**

45: **D**

46: **A**

47: **A**

48: **D**

49: **D**

50: **D**

51: **D**

52: **C**

53: **D**

54: **D**

55: **A**

56: **B**

57: **C**

58: **B**

59: **D**

60: **C**

61: **A**

62: **A**

63: **D**

64: **D**

65: **D**

66: **C**

67: **B**

68: **A**

69: **B**

70: **D**

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Response form

Use this form to mark your answers

01: _____

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