Exam simulation

SPL - Sailplane Pilot License - Flight Performance and Planning

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STUDENT NAME:	DATE AND TIME:

01. Which answer completes the flight plan (marked cells)? See annex (NAV-014) (3,00 P.) Siehe Anlage 3

NAV-014

P6	P7		P8	P9		P9	P10
VE	Wind W/V Wind W/WS		rwk	L	rwSK	MW	mwSK
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: 185°. MH: 184°. MC: 178°.
b) TH: 173°. MH: 184°. MC: 178°.
c) TH: 173°. MH: 174°. MC: 178°.
d) TH: 185°. MH: 185°. MC: 180°.

02. What structural item provides directional stability to an airplane?

a) Differential aileron deflection
b) Wing dihedral
c) Large elevator
d) Large vertical tail

03. If there is any doubt about ambiguity, a time of 1620 is to be transmitted as...

a) Sixteen twenty
b) Two zero.
c) One six two zero.
d) One tousand six hundred two zero

04. Which are the official basic units for horizontal distances used in aeronautical navigation and their abbreviations?

a) Nautical miles (NM), kilometers (km)
b) Land miles (SM), sea miles (NM)
c) Yards (yd), meters (m)
d) Feet (ft), inches (in)

05. Flying with speeds higher than the never-exceed-speed (vNE) may result in...

a) Reduced drag with increased control forces.
b) An increased lift-to-drag ratio and a better glide angle.
c) Too high total pressure resulting in an unusable airspeed indicator.
d) Flutter and mechanically damaging the wings.

06. Which levers in a glider's cockpit are indicated by the colors red, blue and green? Levers for usage of ...

a) Gear, speed brakes and elevator trim tab.
b) Speed brakes, cable release and elevator trim.
c) Speed brakes, cabin hood lock and gear.
d) Cabin hood release, speed brakes, elevator trim

07. What is referred to as torsion-stiffed leading edge?

a) The part of the main cross-beam to support torsion forces.

b) Special shape of the leading edge.

c) The point where the torsion moment on a wing begins to decrease.

d) Both-side planked leading edge (from edge to cross-beam) to support torsion forces.

08. What is the minimum flight visibility in airspace "C" for an aircraft operating under VFR at FL110?

a) 1500 m

b) 3000 m

c) 8000 m

d) 5000 m

09. A boundary between a cold polar air mass and a warm subtropical air mass showing no horizontal displacement is called...

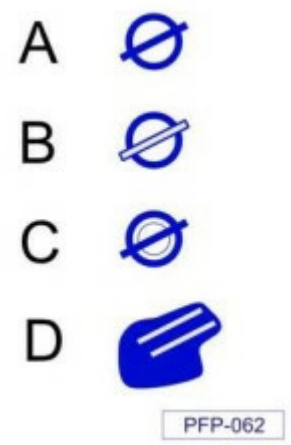
a) Cold front.

b) Warm front.

c) Stationary front.

d) Occluded front.

10. (For this question, please use annex PFP-062) According ICAO, what symbol indicates a civil airport (not international airport) with paved runway? (2,00 P.) Siehe Anlage 5

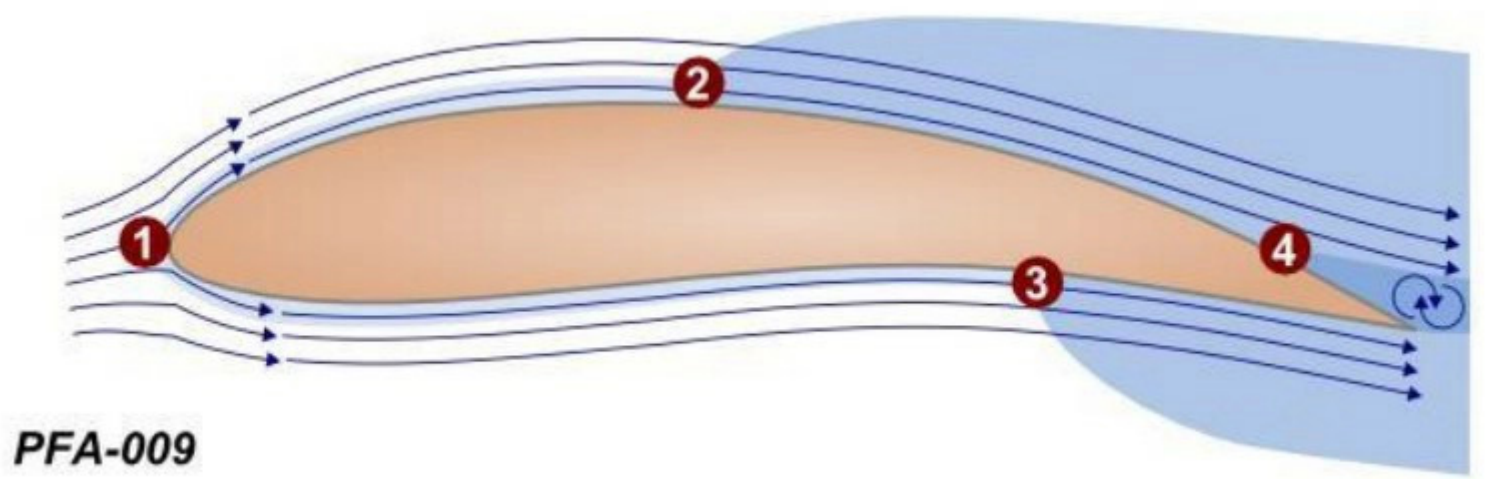


a) B
b) C
c) A
d) D

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

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

12. Which point on the aerofoil is represented by number 4? See figure (PFA-009) Siehe Anlage 2



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

13. A glider pilot has to conduct an off-field landing in a mountainous region. The only available landing site is highly inclined. How should the landing be conducted?

a) Approach with increased speed, quick flare to follow the inclined ground
b) Approach down the ridge with increased speed, push according to ground level during landing
c) According to prevailant wind, approach and land parallel to the ridge with headwind
d) Approach with minimum speed, careful flare when reaching the landing site

14. What is indicated by "buffeting" noticable at elevator stick?

a) C.G. position too far ahead
b) Glider plane very dirty
c) Too slow, wing airflow stalled
d) Too fast, turbulence bubbles hitting on aileron

15. Which are the advantages of sandwich structures?

a) Low weight, high stiffness, high stability, and high strength
b) High temperature durability and low weight
c) High strength and good formability
d) Good formability and high temperature durability

16. 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)

17. Which of the following is NOT a symptom of hyperventilaton?

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

18. With regard to global circulation within the atmosphere, where does polar cold air meets subtropical warm air?

a) At the equator
b) At the subtropical high pressure belt
c) At the polar front
d) At the geographic poles

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

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

20. The glide ratio of a sailplane can be improved by which measures?

a) Higher airplane mass, thin airfoil, taped gaps between wing and fuselage

b) Lower airplane mass, correct speed, retractable gear

c) Cleaning, correct speed, retractable gear, taped gaps between wing and fuselage

d) Forward C.G. position, correct speed, taped gaps between wing and fuselage

21. The term "runway" is defined as a...

a) Round area on an aerodrome prepared for the landing and take-off of aircraft

b) Rectangular area on a land aerodrome prepared for the landing and take-off of helicopters.

c) Rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

d) Rectangular area on a land or water aerodrome prepared for the landing and take-off of aircraft.

22. What is the purpose of the secondary flight controls?

a) To improve the performance characteristics of an aircraft and relieve the pilot of excessive control forces

b) To improve the turn characteristics of an aircraft in the low speed regime during approach and landing

c) To enable the pilot to control the aircraft's movements about its three axes

d) To constitute a backup system for the primary flight controls

23. Visual illusions are mostly caused by...

a) Binocular vision.

b) Colour blindness.

c) Rapid eye movements.

d) Misinterpretation of the brain.

24. What is the correct designation of the frequency band from 118.000 to 136.975 MHz used for voice communication?

a) MF

b) LF

c) HF

d) VHF

25. Under which conditions "back side weather" ("Rückseitenwetter") can be expected?

a) After passing of a cold front

b) Before passing of an occlusion

c) During Foehn at the lee side

d) After passing of a warm front

26. What does the dynamic pressure depend directly on?

a) Lift- and drag coefficient

b) Air density and airflow speed squared

c) Air density and lift coefficient

d) Air pressure and air temperature

27. What are the primary and the secondary effects of a rudder input to the left?

a) Primary: yaw to the right Secondary: roll to the left

b) Primary: yaw to the left Secondary: roll to the left

c) Primary: yaw to the right Secondary: roll to the right

d) Primary: yaw to the left Secondary: roll to the right

28. In which way may an altimeter subscale which is set to an incorrect QNH lead to an incorrect altimeter reading?

a) If the subscale is set to a higher than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended

b) If the subscale is set to a lower than actual pressure, the indication is too low. This may lead to much closer proximity to the ground than intended

c) If the subscale is set to a higher than actual pressure, the indication is too low. This may lead to much greater heights above the ground than intended

d) If the subscale is set to a lower than actual pressure, the indication is too high. This may lead to much closer proximity to the ground than intended

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

a) Hypsometric chart

b) Prognostic chart.

c) Surface weather chart.

d) Significant Weather Chart (SWC).

30. What is the subject of ICAO Annex 1?

a) Flight crew licensing
b) Air traffic services
c) Rules of the air
d) Operation of aircraft

31. Primary fuselage structures of wood or metal planes are usually made up by what components?

a) Covers, stringers and forming parts
b) Frames and stringer
c) Girders, rips and stringers
d) Rips, frames and covers

32. A vertical speed indicator connected to a too big equalizing tank results in...

a) Mechanical overload
b) No indication
c) Indication too low
d) Indication too high

33. What pressure pattern can be observed when a cold front is passing?

a) Continually increasing pressure
b) Shortly decreasing, thereafter increasing pressure
c) Continually decreasing pressure
d) Constant pressure pattern

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

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

35. 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

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

a) 1:34 h

b) 0:34 h

c) 0:46 h

d) 1:46 h

37. 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

38. The Caution Area is marked on an airspeed indicator by what color?

a) Red

b) Green

c) White

d) Yellow

39. After landing, you realize you lost your pen which might have fallen down in the cockpit of the sailplane. What has to be considered?

a) Lighter, loose bodies in the fuselage can be considered uncritical

b) Before next take-off, the cockpit has to be firmly inspected for loose bodies.

c) A flight without a pen at hand is not permitted

d) Succeeding pilots have to be informed about that

40. 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) 5 km
d) 8 km

41. What visual flight conditions can be expected after the passage of a cold front?

a) Good visiblity, formation of cumulus clouds with showers of rain or snow
b) Poor visibility, formation of overcast or ground-covering stratus clouds, snow
c) Scattered cloud layers, visbility more than 5 km, formation of shallow cumulus clouds
d) Medium visibility with lowering cloud bases, onset of prolonged precipitation

42. What values are usually marked with a red line on instrument displays?

a) Operational limits
b) Caution areas
c) Operational areas
d) Recommended areas

43. During approach for landing with strong crosswind, how should the turn from base to final be flown?

a) Turn with maximum 60° bank, carefully watch speed and yaw string, track correction after overshoot.
b) Maximum 30° bank, use rudder to early align sailplane with final track
c) Maximum 60° bank, use rudder to early align sailplane with final track.
d) Turn with maximum 30° bank, carefully watch speed and yaw string, track correction after overshoot.

44. What is the gas composition of "air"?

a) Oxygen 78 % Water vapour 21 % Nitrogen 1 %
b) Oxygen 21 % Nitrogen 78 % Noble gases / carbon dioxide 1 %
c) Oxygen 21 % Water vapour 78 % Noble gases / carbon dioxide 1 %
d) Nitrogen 21 % Oxygen 78 % Noble gases / carbon dioxide 1 %

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

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

46. Which direction corresponds to 'compass north' (CN)?

a) The most northerly part of the magnetic compass in the aircraft, where the reading takes place
b) The direction to which the direct reading compass aligns due to earth's and aircraft's magnetic fields
c) The angle between the aircraft heading and magnetic north
d) The direction from an arbitrary point on Earth to the geographical North Pole

47. What situation is referred to as "shielding"?

a) Ns clouds, covering the windward side of a mountain range
b) High or mid-level cloud layers, impairing thermal activity
c) Anvil-like structure at the upper levels of a thunderstorm cloud
d) Coverage of Cumulus clouds, stated as part of eights of the sky

48. Which are the properties of a Lambert conformal chart?

a) The chart is conformal and an equal-area projection
b) Great circles are depicted as straight lines and the chart is an equal-area projection
c) Rhumb lines are depicted as straight lines and the chart is conformal
d) The chart is conformal and nearly true to scale

49. An aircraft is flying at a pressure altitude of 7000 feet with an outside air temperature (OAT) of +21°C. The QNH altitude is 6500 ft. The true altitude equals...

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

50. In which situation is it NOT possible to achieve a pressure compensation between the middle ear and the environment?

a) During a light and slow climb

b) Breathing takes place using the mouth only

c) All windows are completely closed

d) The eustachien tube is blocked

51. A flight level is a...

a) True altitude.

b) Altitude above ground.

c) Density altitude.

d) Pressure altitude.

52. 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.

53. Point A on the Earth's surface lies exactly on the parallel of latitude of 47°50'27''N. Which point is exactly 240 NM north of A?

a) 53°50'27''N

b) 49°50'27''N

c) 51°50'27'N'

d) 43°50'27''N

54. What does a readability of 5 indicate?

a) The transmission is readable now and then

b) The transmission is readable but with difficulty

c) The transmission is unreadable

d) The transmission is perfectly readable

55. Air consists of oxygen, nitrogen and other gases. What is the approximate percentage of other gases?

a) 21 %
b) 1 %
c) 78 %
d) 0.1 %

56. When increasing the airflow speed by a factor of 2 while keeping all other parameters constant, how does the parasite drag change approximately?

a) It decreases by a factor of 2
b) It increases by a factor of 2
c) It decreases by a factor of 4
d) It increases by a factor of 4

57. Where does the inclination reach its lowest value?

a) At the geographic equator
b) At the magnetic equator
c) At the geographic poles
d) At the magnetic poles

58. Given: True course: 270°. TAS: 100 kt. Wind: 090°/25 kt. Distance: 100 NM. The flight time equals...

a) 48 Min.
b) 37 Min.
c) 84 Min.
d) 62 Min.

59. Which statement about lift and angle of attack is correct?

a) Increasing the angle of attack too far may result in a loss of lift and an airflow separation
b) Increasing the angle of attack results in less lift being generated by the aerofoil
c) Decreasing the angle of attack results in more drag being generated by the aerofoil
d) Too large angles of attack can lead to an exponential increase in lift

60. Which statement is correct with regard to the short-term memory?

a) It can store 7 (±2) items for 10 to 20 seconds
b) It can store 5 (±2) items for 1 to 2 minutes
c) It can store 10 (±5) items for 30 to 60 seconds
d) It can store 3 (±1) items for 5 to 10 seconds

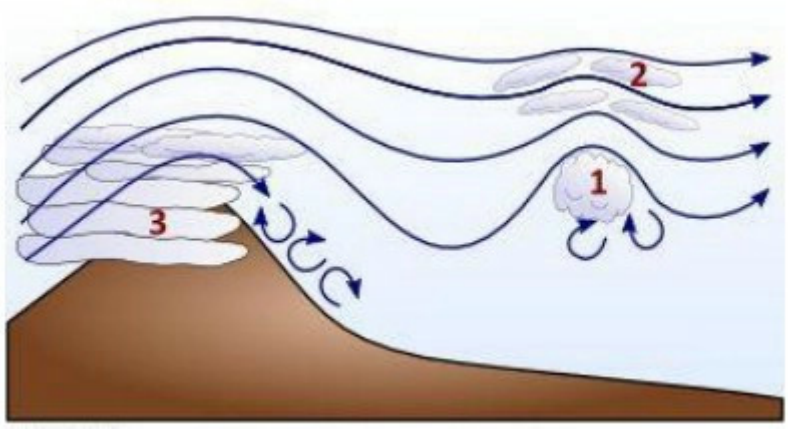
61. What condition may prevent the formation of "radiation fog"?

a) Calm wind
b) Clear night, no clouds
c) Low spread
d) Overcast cloud cover

62. Which of the following factors affects the reception of VHF transmissions?

a) Height of ionosphere
b) Altitude
c) Twilight error
d) Shoreline effect

63. What weather phenomenon designated by "2" has to be expected on the lee side during "Foehn" conditions? See figure (MET-001). Siehe Anlage 1



a) Cumulonimbus
b) Cumulonimbus
c) Altocumulus lenticularis
d) Altocumulus Castellanus

64. Stability around which axis is mainly influenced by the center of gravity's longitudinal position?

a) Longitudinal axis

b) Lateral axis

c) Gravity axis

d) Vertical axis

65. 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.

66. During a winch launch, after reaching full climb attitude, the airspeed indicator fails. What action should be taken by the glider pilot?

a) Continue launch to normal altitude, use horizontal image and airstream noise to conduct flight as planned

b) Try to re-establish airspeed indication by abrupt changes of speed during launch

c) Push elevator, decouple cable and perform short pattern with minimum speed

d) Continue launch to normal altitude, use horizontal image and airstream noise for pattern and landing right away

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

a) Lever.

b) Torque.

c) Span width.

d) Balance arm.

68. Which of the following documents have to be on board for an international flight? a) Certificate of aircraft registration b) Certificate of airworthiness c) Airworthiness review certificate d) EASA Form-1 e) Airplane logbook f) Appropriate papers for every crew member g) Technical logbook

a) B, c, d, e, f, g

b) A, b, c, e, f

c) D, f, g

d) A, b, e, g

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

a) 78 %

b) 12 %

c) 21 %

d) 18.9 %

70. During approach, tower provides the following information: "Wind 15 knots, gusts 25 knots". How should the landing be performed?

a) Approach with minimum speed, correct changes in attitude with careful rudder inputs

b) Approach with normal speed, maintain speed using spoiler flaps

c) Approach with increased speed, correct changes in attitude with firm rudder inputs

d) Approach with increased speed, avoid usage of spoiler flaps

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Response Scheme

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

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

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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:
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41:	42:	43:	44:
45:	46:	47:	48:
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57:	58:	59:	60:
61:	62:	63:	64:
65:	66:	67:	68:
69:	70:		