

**CIVIL AVIATION AGENCY
THE REPUBLIC OF SLOVENIA**



**SAMPLE OF
WRITTEN EXAM QUESTIONS**

**LICENCE
PARAGLIDING PILOT**

December 2018



ELEMENTARY AERODYNAMICS, FLYING THEORY AND TECHNIQUE (A)

A-01 Which body of the same frontal cross-section and at the same speed offers least drag?

- a) Round plate.
- b) Sphere.
- c) Modern airfoil.

A-02 What is the glide angle?

- a) Angle between the profile chord and relative air stream.
- b) Angle between the profile chord and horizontal surface – ground.
- c) Angle between the flying direction and horizontal surface – ground.

A-03 The lift is result of:

- a) Airflow around the wing.
- b) Displaced air.
- c) Border layer.

A-04 What is true when we push accelerator (speed bar):

- a) Glider is more stable due to the increased speed.
- b) Glider is more sensitive to collapses.
- c) Higher risk of deep stall.

A-05 During full stall:

- a) There is no lift, horizontal speed is zero, inner pressure is decreased.
- b) Vertical speed increase.
- c) A and B are correct.

A-06 When we reach the best glide speed with gliders class A or B?

- a) When we fly with 25% speed bar.
- b) With trim speed.
- c) When we brake the glider 50%.

A-07 What is the true airspeed?

- a) Speed relative to the surrounding air.
- b) Speed relative to the ground.
- c) Wind speed.

A-08 How does the higher wing load affect the max. speed?

- a) Max. speed decreases.
- b) Max. speed increases.
- c) Max. speed stays the same.



A-09 The drag of the body, at the same angle of attack, is increasing with speed:

- a) Linear.
- b) With the square of the speed.
- c) Stays approximately the same.

A-10 How do we land on the slope?

- a) Always into the wind.
- b) Transversal to the slope.
- c) Down the slope.



METEOROLOGY (M)

M-01 Tropo, strato, meso, iono sphere are:

- a) Climate zones.
- b) Layers of the atmosphere, as listed in height from the ground up.
- c) Areas that are experience weather.

M-02 What is happening with density of oxygen in troposphere as altitude is increasing?

- a) Stays the same.
- b) Is dropping
- c) Depends on the air pressure changes.

M-03 At which phase transition heat is generated and what is the name of the transition?

- a) Gas to liquid; condensation.
- b) Solid to gas; sublimation.
- c) Liquid to solid; condensation.

M-04 Appearing of cirrus clouds usually means coming of:

- a) Cold front.
- b) Warm front.
- c) Storm front.

M-05 Which clouds always consist of ice crystals?

- a) Stratus, cumulus.
- b) Cirrostratus, cirrocumulus.
- c) Nimbus, stratocumulus.

M-06 From which clouds we can expect thunderstorms?

- a) ST – stratus
- b) SC – stratocumulus.
- c) CB – cumulonimbus.

M-07 What is causing the wind?

- a) Gravity.
- b) Differences in air pressure.
- c) Earth rotation.

M-08 Turbulence can appear in an opened atmosphere:

- a) When the wind speed is slowly increasing with the height.
- b) When the wind speed doesn't change with the height.
- c) When the wind speed is rapidly increasing with the height.



M-09 Which clouds are the consequence of the thermal convection?

- a) Altocumulus lenticularis.
- b) Nimbostratus.
- c) Cumulus.

M-10 What is to be done, when we see dark blue blackness on the horizon and realize that a thunderstorm is coming closer?

- a) We execute a fast descent manoeuvre and land quickly.
- b) We fly on and observe the development and direction of the thunderstorm.
- c) We fly on and wait till the storm comes closer, then make a fast descent manoeuvre and land quickly.

M-11 What can we expect on the lee side when strong general wind is blowing?

- a) Lift.
- b) Thermal lift.
- c) Strong rotor with downdraft areas.

M-12 On the open space wind is blowing at 4 m/s. What can we expect, when the valley narrows?

- a) Increased wind speed - Venturi effect.
- b) Same wind speed, narrowing of the valley has no effect.
- c) We can expect strong thermals.

**CONSTRUCTIONS AND MATERIALS (K)****K-01 What is the purpose of diagonal ribs?**

- a) They provide nicer shape of the wing.
- b) They reduce the number of lines and increase wing solidity.
- c) They prevent distribution of air inside the wing.

K-02 What should be the wing load of a paraglider?

- a) 3,3 kg/m².
- b) Within the limits prescribed by the producer.
- c) 2-4 kg/m².

K-03 What is the formula for calculating aspect ratio?

- a) Wingspan²: surface.
- b) Surface²: wingspan.
- c) Surface²: wingspan².

K-04 Why it is not recommendable to store the glider for longer time in a sealed package?

- a) It can be damaged by the mildew.
- b) It is recommendable!
- c) Condensed moisture can provoke corrosion.

K-05 What is the best attachment of the rescue parachute to the harness?

- a) 1.5 m long strap.
- b) On both shoulder straps of the harness
- c) On the right main carabineer (right-handed).

K-06 How many categories EN 926-2 test have?

- a) 4 cat.: A, B, C and D.
- b) 4 cat.: 1, 1-2, 2, 2-3.
- c) 3 cat.: 1, 2 and 3.

K-07 Paragliders in A and B class must not enter deep spiral according to the EN classification?

- a) Until dropping in spiral less than 10 m/s.
- b) Until dropping in spiral less than 14 m/s.
- c) Until dropping in spiral less than 8 m/s.



EMERGENCY PROCEDURES (E)

E-01 What is asymmetric collapse?

- a) Frontal closing of the wing due to the turbulent air.
- b) Deformation of one side of the wing.
- c) Deformation of the wing, possible only as a test manoeuvre.

E-02 What is cravat?

- a) Twist around the risers.
- b) Stacked tip of the glider between the main lines.
- c) A and B are correct.

E-03 How do we perform big ears?

- a) With symmetric pull of one or two outer B-lines on both sides.
- b) With symmetric pull of all A-lines on both sides.
- c) With symmetric pull of one or two outer A-lines on both sides. Some gliders have special line or raiser for big ears.

E-04 What is significant for deep spiral (stable spiral)?

- a) The wing has bigger peripheral speed than pilot, so the rotation around the wing reduces.
- b) Pilot has higher speed than wing, so there is potential to twist the lines.
- c) The canopy remains in the rotation despite the release of the inner brake line.

E-05 Under what circumstances during B-stall can the wing massively surge forward, leading to the possible loss of control?

- a) If we release brake lines immediately after the wing deforms and swings backward.
- b) No danger, it is very safe manoeuvre.
- c) When we release B-risers at the vertical speed of 6-8 m/s.

E-06 When paraglider (technically flawless) can a deep stall?

- a) On border angles of attack.
- b) On big ears or when is wet during the rain.
- c) In sharp turns left or right: in areas with down air, on angles of attack not exceeding critical one.

E-07 What are the vertical and horizontal speed of a full stalled glider (V_h=horizontal speed, V_v=vertical speed)?

- a) V_h=0m/s, V_v=4m/s.
- b) V_h=8m/s, V_v=15m/s.
- c) V_h=0m/s, V_v=15m/s.

**E-08 Which reactions cause the spin?**

- a) 1. I fly at a minimum speed and I pull one brake even more; 2. When I fly at a minimum speed, I quickly release one brake and the other does not; 3. In normal flight I pull one brake strong and fast up to 100%.
- b) 1. In a flight with a strongly braked glider, I make a turn without loosening the opposite brake; 2. In the case of quick change of turns, where there is no smooth transition from one direction of turn into another, especially if I'm too rough with the pulling of the brakes; 3. In the case of irregular exits from the stall and from full stall, and after a strong asymmetric collapse, if it was not resolved correctly..
- c) All of which can cause negative rotation.

E-09 After opening the rescue parachute at a higher altitude, the main glider was re-formed. Canopies dragged each on its side (scissor position). The rate of decline is increasing, decline is unstable. How do I solve the situation?

- a) I pull D-risers to get glider closer.
- b) Glider can be pulled closer and slow down descending rate by bending the brakes around hands and pull them down.
- c) a) and b) is correct.

E-10 There is a danger that after landing on too strong wind (40 km/h) formed glider would drag pilots on the ground with the wind. Solution:

- a) At the moment of landing, the glider must be collapsed by pulling B or C risers downwards.
- b) At the moment of landing, the glider must be collapsed by pulling the brakes downwards.
- c) At the moment of landing it is necessary to disconnect one side from the harness.

E-11 What are theoretically possible rescue manoeuvres if drag us into a Cb-cloud (the usual quick descent procedures are ineffective)?

- a) Full-stall with repeatedly wrapped commands.
- b) Asymmetric collapse with a strong pull of the A - riser downwards.
- c) a) and b) is correct.



AVIATION MEDICINE AND FIRST AID (L)

L-01 Body loads on steep spiral can cause:

- a) Shallow breathing.
- b) Increased heart rate and sweating.
- c) Visual disturbance or even unconsciousness.

L-02 Why it is important to eat and drink before flying?

- a) That we are not hungry and nervous.
- b) It is better not to drink because we will not be able go to toilet when flying
- c) Because the reduced value of sugar in the blood and dehydration can significantly worsen and slow down judgement and reaction.

L-03 The pilot is in trouble because he did not react correctly in the spiral. Your opinion what was the most likely reason.

- a) He was probably scared.
- b) He was probably not experienced and did not know the correct way out of the spiral.
- c) The first two possible reasons are possible; moreover, it is more likely that due to the G-load between the spiral, he was not able to properly judge and react.



RULES AND REGULATIONS (Z)

Z-01 Where do we get the information about the airspace classification in Slovenia and about the airspace that is also intended for pilots?

- a) NOTAM message.
- b) VFR and GPS maps.
- c) On information boards at the take-offs.

Z-02 Class D airspace is also at:

- a) CTR Ljubljana, Maribor, Portorož.
- b) TMA Ljubljana, Maribor, Portorož.
- c) All sports airports.

Z-03 Where is the class G airspace up to 2500m ft AGL and flying there might be prohibited or limited when NOTAM is issued due to military activities?

(Annex nr. 2)

- a) This is the area around Ilirska Bistrica - at points 10, 13 and 14.
- b) This is the area around the military airport of Cerklje - at point 4.
- c) This is the area around the Krško power plant - at point 8.

Z-04 Abbreviation NOTAM means:

- a) Notice about dangerous weather.
- b) It only affects pilots in air traffic, not paragliders.
- c) Notice, which affects all participants in air traffic and sets limitations, changes and prohibitions in certain area.

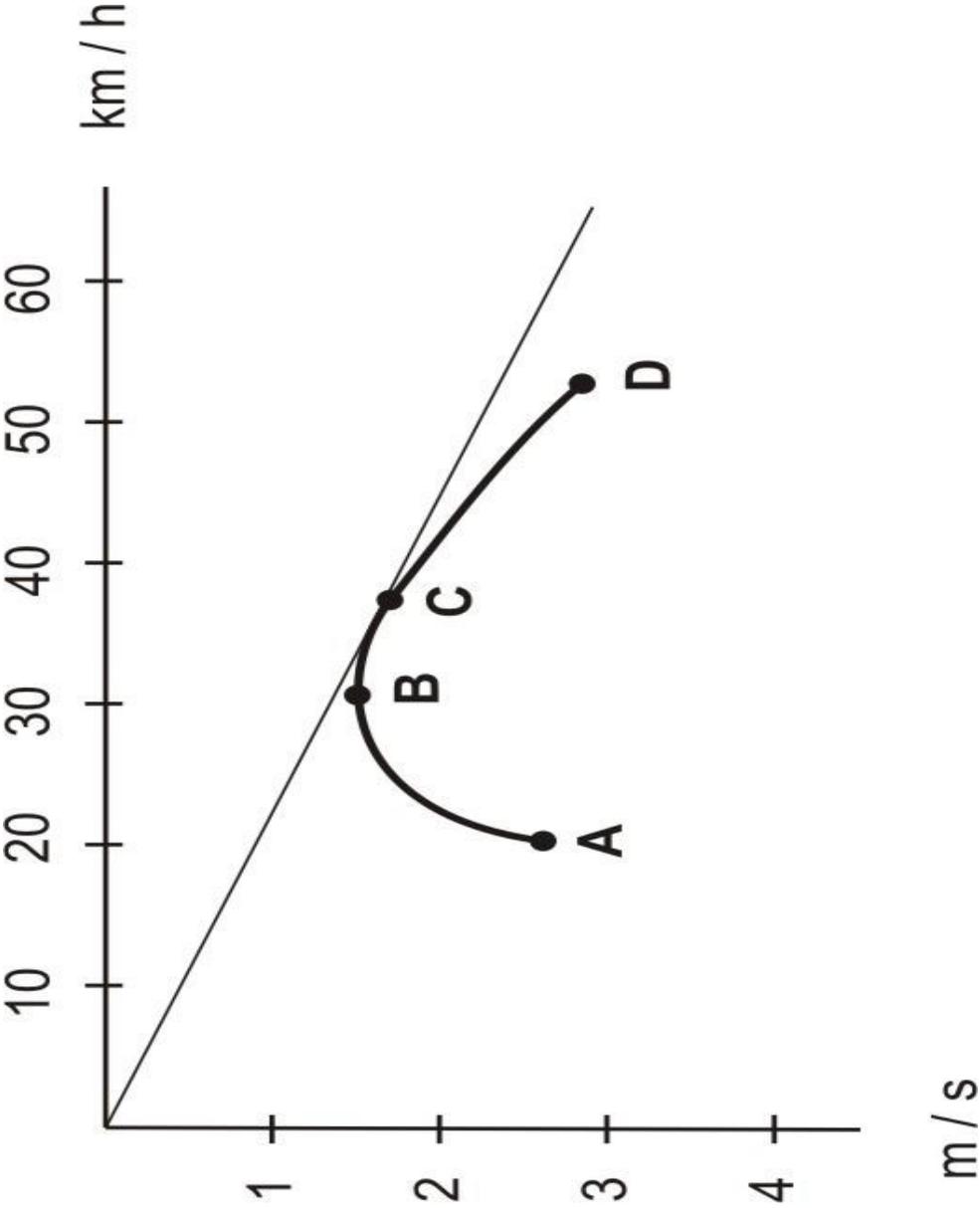
Z-05 How do two pilots avoid when coming close each other at the same altitude near the slope?

- a) Both are avoiding to the right.
- b) Pilot with the slope on the left is avoiding.
- c) Pilot with the slope on the right is avoiding.

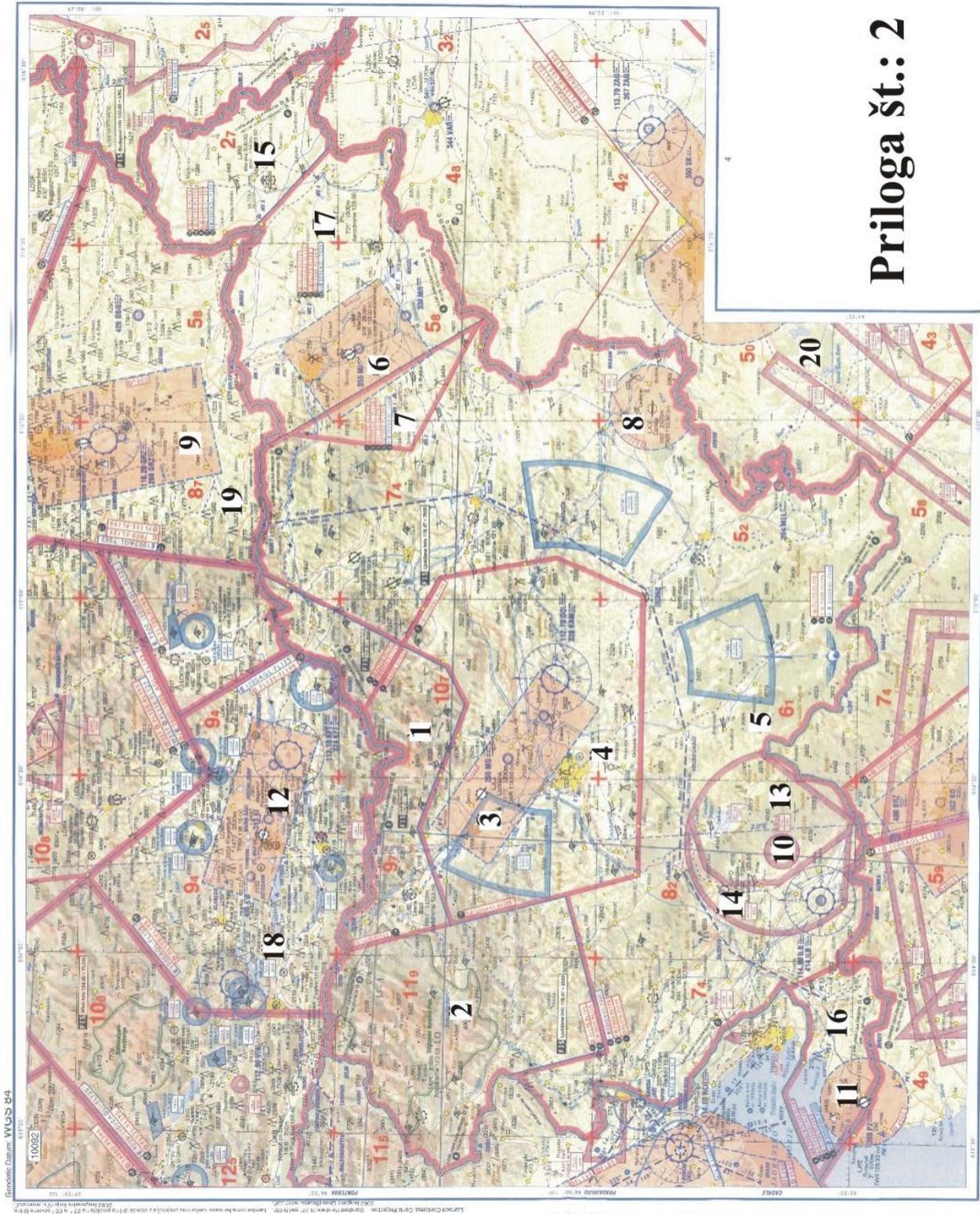
Z-06 Can a paraglider land on a sport airport?

- a) Yes, that's the purpose of an airport.
- b) Yes, if paraglider has a motor.
- c) Yes, if agreed with airport manager.

Annex Nr.: 1



Annex Nr.: 2



Priloga št.: 2