

## Navigation

### Question overview:

1 - What type of navigation do sailplane pilots use?

1. Visual orientation - navigation and satellite navigation
2. Astronomical navigation
3. Radio navigation
4. Computer navigation

2 - Define the geographic coordinate system

1. Network of meridians and parallels
2. The Great Circle and the Greenwich Meridian
3. Network of meridians and semicircles
4. Semicircle with comparatives

3 - What constitutes the origin of the geographic coordinate system.

1. The North Pole and the Zero Meridian
2. The meridian and meridian passing through Greenwich
3. Equator and the meridian passing through the Greenwich Observatory
4. Equator and the great circle

4 - List in order the international abbreviations for the following parts of the world: north, south, east,

northeast, southwest, west, northwest, southeast

1. E, NE, SW, W, NW, SE, S, N
2. SW, NE, E, W, SE, S, NW, N
3. N, N, E, NE, SW, W, NW, SE
4. S, E, NE, SW, W, NW, SE, N

5 - Characteristic points and circles on the earth's surface are marked in picture no.1.

1. 1 - north pole, 2 - equator, 3 - great circle, 4 - center of the earth, 5 - small circle, 6 - earth axis, 7 – south pole.

2. 1 - south pole, 2 - small circle, 3 - great circle, 4 - center of the earth, 5 - equator, 6 - axis of the earth,

7 – the north pole.

3. 1 - north pole, 2 - small circle, 3 - equator, 4 - center of the earth, 5 - great circle, 6 - earth

axis, 7 – south pole.

4. 1 - north pole, 2 - small circle, 3 - big circle, 4 - center of the earth, 5 - equator, 6 - earth

axis, 7 – south pole.

6 - The distance at which the point stays north or south of the half-meter is expressed in degrees

1. Longitude
2. Geographical longitude and latitude
3. Geographic coordinates
4. Geographical latitudes

7 - Lines of longitude or meridians measure the distance east and west of

1. Greenwich
2. Of the great circle
3. North Pole
4. Ecuator

8 - Every point on the earth's surface can be identified by its geographic values

widths and lengths which are expressed as

1. Degrees and minutes of an angle
2. Geographic point
3. Geographic coordinates
4. Degrees of the circle

9 - The angular difference between the direction of true north and magnetic north is called

1. Inclination
2. Declension
3. Compass error
4. Variation

10 - If the aircraft is to fly on a true course of  $270^\circ$  and there is a magnetic variation of  $8^\circ$  E, in what magnetic heading should he fly

1.  $186^\circ$
2.  $278^\circ$
3.  $270^\circ$
4.  $262^\circ$

11 - The eastern variation should be subtracted from the actual course and the western variation should be added in order to

determined the magnetic course

1. Incorrect
2. It depends on the size of the course
3. Correct
4. True for the prime meridian

12 - A compass direction of 315° can also be expressed as

1. Southwest
2. Northwest
3. Southeast
4. Northeast

13 - One centimeter on a 1:500,000 scale map represents the distance of

1. 15 kilometers
2. 10 kilometers
3. 5 kilometers
4. 50 kilometers

14 - Contour lines on the map connect points with it

1. Barometric pressure
2. Above sea level
3. Borders of sections
4. The height of the water level

15 - Lines drawn on the map connect points with it

1. Magnetic north
2. Magnetic change
3. Magnetic variation
4. Magnetic declination

16 - The airport symbol ® means that the airport

1. Not allowed for traffic
2. Permitted for jet aircraft only
3. not allowed for light aviation.
4. Allowed for traffic

17 - Navigation procedure using a map or chart to determine the position of an aircraft in relative to the earth is called

1. Dead-reckoning navigation
2. Pilotage
3. Time-remote navigation
4. Terrestrial navigation

18 - The navigation method in which the time and distance of control points are calculated is called

1. Pilotage
2. Instrumental navigation
3. Radio navigation
4. Dead-reckoning navigation

19 - The difference between the magnetic direction and its reciprocal is

1. 270°
2. 0°
3. 180°
4. 90°

20 - What does the abbreviation GPS mean

1. Ground Polar Search
2. Global Polar Search
3. Ground Positioning System
4. Global Positioning System

21 - What is the minimum number of satellites from which the GPS must receive a signal in order to work.

1. 24
2. 3
3. 8

4. 1

22 - How GPS recognizes the geographic coordinates where it is located

1. By entering the coordinates manually
2. By receiving a radio signal from a satellite above it.
3. By positioning the VOR
4. Automatic - by receiving signals from at least 3 satellites

23 - What do the terms latitude and longitude mean?

1. Distance in height
2. Length and width
3. Surpassing on the side
4. Width and length

24 - What do the abbreviations ETA, XTE, GS,

1. Estimated time of arrival, distance from the course, speed over the terrain.
2. Speed over the terrain, overcoming the terrain, speed through the air.
3. Angle of deviation from the course, speed over the terrain, overhanging the terrain.
4. Estimated time of arrival, speed over the terrain, distance from the course.

25 - Picture no. 2 shows a map on which certain signs are marked with numbers. Looking at the map choose the correct answer.

1. 13. Frequency NDB; 3. Main road; 24. Elevation point
2. 4. Railway; 1. Inhabited place; 10. Altitude of obstacles
3. 8. Antenna pole; 11. Church with two towers; 5. Lake or pond
4. 11. Altitude of obstacles; 19. Factory; 17. Transmission line

26 - Picture no. 2 shows a map on which some signs are marked with numbers. Looking at the map choose the correct answer.

1. 17. Isogona; 16. VOR/DME; 12. non-directional radio beacon.
2. 18. Railway bridge; 15. Airport with grass pitch; 5. The river
3. 24. Prohibited zone; 22. Isogona; 9. Illuminated obstacle
4. 1. Inhabited place; 20. Factory; 11. Altitude of obstacles

27 - Picture no. 2 shows a map on which certain signs are marked with numbers. Looking at the map choose the correct answer.

1. 18. Railway bridge; 15. International airport; 21. Elevation point
2. 7. Church with two towers; 8. Antenna pole; 10. Relative height of the obstacle
3. 15. International airport; 6. River; 3. Highway
4. 23. Elevation point; 25 Sports stadium; 20. Factory

28 - In picture no. 3 in the attachment it is marked with the letter A

1. Western declination
2. Western magnetic variation
3. Eastern magnetic variation
4. Position and course of the aircraft

29 - The UTC notation for hourly time is the same as i

1. LT or ZT
2. GMT or LT
3. Coordinated time
4. GMT or Zulu time

30 - How long does it take to fly 120 kilometers if the average speed is 70 km/h

1. 1 hour and 42 minutes
2. 1 hour and 50 minutes
3. 1 hour and 35 minutes
4. 1 hour and 30 minutes

31 - If a glider flies 100 km in 50 minutes, what is its average speed

1. 90 km/h
2. 100 km/h
3. 120 km/h
4. 140 km/h

32 - Which sides make up the wind triangle

1. Sailplane path, wind direction, sailing course
2. Sailplane course, wind direction, line parallel to the wind direction
3. Wind line, wind direction and wind drift
4. Wind direction, glider path, drift angle

33 - The sailplane course is

1. The angle between the gauge and the longitudinal axis of the sailplane

2. The angle between the direction of north and the transverse axis of the sailplane
3. The angle between the direction of north and the longitudinal axis of the sailplane
4. The angle between the meridian and the parallel at the place where the sailplane is located.

34 - In using GPS, the "waypoint" is

1. A point on the path along which the glider flies
2. A point whose coordinates are recorded in the GPS memory
3. The line on the road that the sailplane should cross
4. A circle with a radius of 500 m through which the sailplane should pass

35 - In picture no. 4 in the attachment with the letter  $\beta$ , the angle is called

1. Track
2. Bearing
3. Sailplane course
4. Drift angle

36 - In picture no. 4 in the attachment with the letter  $\alpha$ , the angle is called

1. Wind course
2. Drift angle
3. Course
4. Flight direction

37 - In picture no. 4 in the attachment, the label "WP Jarak" means

1. Course in the direction of Jarak
2. The path of the sailplane to Jarak
3. Waypoint Jarak
4. World Press Jarak

38 - Is there a difference between the following geographic parallels A =  $45^{\circ} 22' 30''$  and B =  $45^{\circ}$  and  $22.50'$

1. It depends on the latitude
2. It doesn't exist
3. It depends on the projection
4. There is

39 - How many meridians does the coordinate system have?

1. 60
2. 360
3. 180
4. 90

40 - How many parallels are there in the northern hemisphere

1. 90
2. 180
3. 45
4. 60

41 - How many kilometers are there in a nautical mile

1. 1,500 km
2. 1,609 km
3. 1,000 km
4. 1,852 km