Questions at the state exam of Cartography MSc

Questions A

1. The legends of general geographic, topographic and thematic maps. The grouping of legend elements. The relationship between cartographic symbols and features.

2. The types of geographical names and the expression of their information content on maps. Lettering (writing) of geographical names for various map readers and language speakers.

3. The role of geodesy in cartography. Instruments and methods of surveying (measuring) direction, distance and elevation. The methods of geodetic and topographic surveying. Latest methods of surveying and data acquisition.

4. The basic processes of geovisualization, user-oriented cognitive research and the use of its achievements in planning the geoinformatic interfaces.

5. The major groups of projections. Aspects choosing projections in geography and topocartography. Projections for thematic maps. Defining the term projection in geoinformatics.

6. The types, methods and physical background of remote sensing and photogrammetry. Processing methods of remotely-sensed data types.

7. The concept of thematic maps and their types. Concepts of designing thematic maps. Mathematical ways of processing thematic data.

8. The GNSS systems and their applications.

9. The most important digital methods of the preservation and presentation of cartographic heritage (digitization of old maps, globes and other forms of cartographic visualization, georeferencing, web visualization) based on a Hungarian and a foreign project.

Questions B

1. The theoretical background of vector systems and their interpretation for databases. The methods of topological description, the role of indexing methods, spatial indexing methods, spatial functions.

2. The theoretical background of raster systems, colour models, image processing functions, classification methods,

3. Three dimension models (TIN and DEM) and their practical applications, interpolation methods.

4. The structure of a geoinformatic application for web using vector and raster data. The role of the server and client sides. Other web applications for geoinformatic applications.

5. How would you build a geoinformatic database, which contains vector, raster and elevation data from various sources. Plan the steps of the work.

6. The software tools of implementing web and desktop geoinformatic systems.

7. The role of interpolation in geoinformatic modelling. The methods of calculating the errors to check the authenticity of surface models.

8. Imagine making the thematic map of given area according to the land cover in various resolutions (100 metres, metres, centimetres). Present the data sets and processing methods for preparing the map.

9. The software development tools and libraries (open source and commercial) which are useful for developing geoinformatic applications.

10. Opportunities of open source operation systems and applications in cartography and geoinformatics.