Final, master exam question list for

Geoinformation and Spatial Management

1. Spatial and temporal changes in the anthropopressure factors
2. Autonomous or subordinated landscape, which of them is more susceptible to anthropogenic pressure, justify your opinion
3. The utility meaning of gradient phenomena and geochemical barriers
4. Parameters needed to calculate maximum retention in the Soil Conservation Service Curve Number (SCS-CN) method
5. Application of geostatistical methods to assess spatial or temporal variability in natural environment research and exploration
6. The importance and practical use of semivariance and semivariogram in modeling spatial phenomena
7. The reasons and effect of urban heat island
8. Methods of environmental impact assessments
9. Typical good practices in public consultations of EIA
10. Principles of sustainable development
11. Ecosystem services - definition and classification.
12. Essence of external costs (give one example)
13. Concept of bioeconomics (definition and importance in present economy).
14. Types of resolution concerning satellite data
15. List and discuss three selected satellites for environmental applications.
16. What is the difference between multi-rotor and fixed-wing UAVs - describe the advantages and disadvantages of these constructions. In which missions multi-rotor is a better choice than fixed-wing UAV?
17. Please discuss the purpose and rules of FUAs delimitation
18. The arrangement of elements of the water supply infrastructure and the reliability of water supply.
19. What kind of basic data models are used in GIS and what is the difference between them?
20. Explain the idea behind selected multilayer operation on vectors (union, intersection, symmetrical difference, identity, clip, erase, split)
21. Rural engineering definition and aims. What human activities and engineering specialties are covered by rural engineering? Rural engineering scale of operation.
22. Definition of irrigation. Types of irrigation in term of water distribution.
23. What are the advantages and disadvantages of 3D laser scanning
24. Suppose we have a data set with three bands with the following wavelength range in micrometer: I: 0.7-0.9, II: 0.9-1.4, III: 0.61-0.7. Is possible to obtain a true colour composite? Explain briefly your answer.
25. For the exterior orientation of single aerial image. Enlist one source of error in case of exterior orientation.

26. What is the difference between DTM (Digital Terrain Model) and DSM (Digital Surface Model)? Clarify your answer by drawings.
27. Explain what problem will you encounter in the region of the high-rise buildings after orthorectify the image? How do you solve this problem? Explain the process.
28. Mention separately examples of an application of thermal cameras and multispectral cameras.
29. Imagine you have a stereo-imagery and an orthophoto of a road in the mountains which you must map with a high positional accuracy. Would you choose to digitize the road from the orthophoto or stereo-plotting and why? Promote your answer by comparing the accuracy of both methods and name three sources of error which contribute to the error estimation.