

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C5 - GEOSPATIAL INFORMATION SYSTEMS

March 2016

Note: This examination consists of 10 questions on 1 page.

Marks

Q. No

Time: 3 hours

Value Earned

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|---------------------|--|--------------|---------------|
| 1. | Define a GIS. | 3 | |
| | How does a professional GIS (e.g., ArcGIS Desktop) differ from AutoCAD? | 5 | |
| 2. | What are the advantages/disadvantages of the two primary GIS data models? Provide examples of the types of information that can best be represented by each. | 12 | |
| 3. | GIS has long been using a “geo-relational data model”, sometimes called “hybrid data model”, to build its databases. Explain this model, with an example showing how spatial and attribute data are structured and stored in a database. | 12 | |
| 4. | What is a digital elevation model? | 3 | |
| | Describe the differences between systematic and adaptive sampling methods in collecting elevation data for DEM. | 5 | |
| 5. | Define and compare local operation and focal operation in raster data processing. Give an example application for each of them. | 10 | |
| 6. | Define the term metadata, provide two examples of more common metadata standards, and list at least three key components of a metadata standard. | 10 | |
| 7. | Use a diagram and explain the line-in-polygon overlay operation. Clearly describe the input and output of the operation. | 10 | |
| 8. | List and briefly define the five main data quality indicators as included in most GIS data quality standards. | 10 | |
| 9. | What are the key human issues, other than the computer issues, which we need to consider in implementing a GIS project? | 10 | |
| 10. | People argue about the impact of the web mapping services provided by the mainstream IT firms such as Google and Yahoo, on the GIS development. What do you think? Include pros and cons. | 10 | |
| Total Marks: | | 100 | |