CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C5 - GEOSPATIAL INFORMATION SYSTEMS March 2015

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

Q. No Time: 3 hours Value Earned

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1.	In what ways are GIS different from other classes of information systems? (hints: refer to the two words "Earth" and "geographic space" in the textbook)	10	
2.	Define map projection and explain why map projections are needed.	8	
3.	Describe relative merits and limitations of raster and vector data, in terms of data model/structure, data collection and storage, attribute handling, data processing and analysis, and output quality.	12	
4.	List and briefly explain at least five criteria that are commonly used to describe geospatial data quality.	10	
5.	What is "address matching"? Why is address matching an important vector geoprocessing technique?	8	
6.	Acquiring terrain data is a sampling process because we cannot survey every point on Earth's surface. Compare "systematic" and "adaptive" methods used to sample terrain data. Use sketches if they help you explain.	10	
7.	Assume a GIS modeling problem of finding suitable forestland for harvesting, which cannot be within 300 ft. of roads and cannot be within 500 ft. of streams. Given road map, stream map and forest-stand map data, draw a flowchart to show each step, including data input layers, processing functions and output, of the problem solving process.	12	
8.	Compare and contrast thin-client and thick-client strategies in designing a web mapping application.	10	
9.	What are the major issues pertaining to people, the three categories of users identified in Chapter 1 of the textbook, in GIS implementation?	10	
10.	Aside from the traditional data collection methods, such as land surveying and photogrammetry, what are some recent approaches that allow quicker and more efficient GIS data collection? Name and briefly describe at least three of these methods.	10	
	Total Marks:	100	