

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS**

**C-5 GEOSPATIAL INFORMATION SYSTEMS**

**March 2013**

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

**Marks**

<u>Q. No</u>	<u>Time: 3 hours</u>	<u>Value</u>	<u>Earned</u>
1.	Define the following terms:		
	a) Geographical information system	3	
	b) Feature identifier	3	
	c) Uncertainty	3	
	d) Helper program	3	
	e) Entity-relationship diagram (E/R diagram)	3	
2.	If the GIS data you have in a GIS project covers two UTM zones, what are the problems that you will expect?	4	
	Briefly describe two approaches that have been developed to deal with these problems.	4	
3.	List the criteria (or components of geospatial data quality) that are commonly used to describe GIS data quality.	4	
4.	Using point form in a tabular format, contrast relative merits and limitations of raster and vector data in terms of data storage, retrieval, analysis and presentation.	10	
5.	GIS has long been using a “georelational 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	
6.	What is a digital elevation model?	3	
	Describe the differences between systematic and adaptive sampling methods in collecting elevation data for DEM.	5	
7.	Discuss the current trend of storing minimum topological relationship in a GIS database and computing them on the fly when required.	10	
8.	What are the human issues, other than computer issues, that we need to consider in operating a GIS?	10	
9.	What are the technical problems of sharing geographic data?	5	
	How would a data interchange standard help data sharing?	5	
10.	Do you think the merging of GIS and mainstream IT will lead to the demise of GIS eventually?	10	
<b>Total Marks:</b>		100	