

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C-5 GEOSPATIAL INFORMATION SYSTEMS

October 2010

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.	Briefly define/explain the following terms (2 marks each): a) Feature code b) Metadata c) Address matching d) Point-in-polygon search e) Entity-relationship modeling	10	
2.	Describe how the following three categories of GIS users interact with GIS system and their relationships with each other: a) Viewers, b) General Users, and c) GIS Specialists.	10	
3.	Describe the concept of map layers in a geographic information system. Explain how we organize data in layers. Give examples of two common map layers and identify at least four attributes that would likely be attached to the features on each map layer.	12	
4.	Using a simple diagram, explain the three basic elements of topological relationships in geographic data representation.	7	
5.	Explain why we need explicit topological data in a GIS database.	8	
6.	Explain, with examples, the relational data model. Show how a relational database can be used to store the spatial and attribute data for land parcels.	10	
7.	You are asked to prepare a map that shows the forest lands that are suitable for harvesting. The lands must not be: (1) within 300 feet of roads, and (2) within 500 feet of streams. You are given three digital maps showing roads, streams and forest stands, respectively. Describe the procedure (steps, required data, queries and spatial operations, and outputs) that you will use to complete the task. A flowchart would help.	15	
8.	What are the advantages of storing digital terrain data in TIN rather than in DEM?	8	
9.	What is a “data transfer standard”? With the aid of a diagram, explain how the use of a data transfer standard will ease the exchange and sharing of geographic data among organizations.	10	
10.	Describe three key issues of your choice in implementing a GIS and explain why you think they are important.	10	
Total Marks:		100	