

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS**

**C-5 GEOSPATIAL INFORMATION SYSTEMS**

**March 2012**

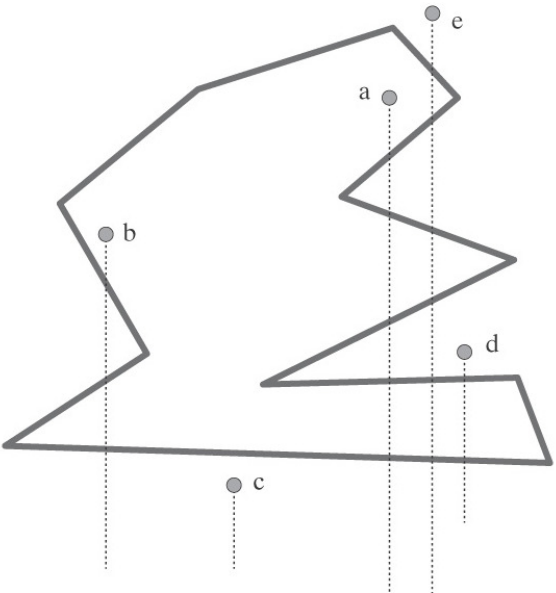
**Note:** This examination consists of 10 questions on 2 pages.

**Marks**

**Q. No**

**Time: 3 hours**

**Value   Earned**

1.	a) Define a GIS. b) How does a GIS (e.g., ArcGIS Desktop) differ from Google Maps?	3 3	
2.	Explain how the vector data model differs from the raster data model in <b>representing</b> spatial features.	6	
3.	What four types of information can be distorted by map projection?	8	
4.	Layers (or levels) are a fundamental means of organizing geographic data in almost all GIS. Why?	10	
5.	Explain point-in-polygon search by the half-line (or plumb-line) algorithm. Use the figure below to facilitate your explanation. 	10	
6.	Define and compare local operation and focal operation. Give an example application for each of them.	10	
7.	You are asked to find the suitable forestland for harvesting, which should satisfy the following criteria: 1) cannot harvest within 300 ft. of roads; and 2) cannot harvest within 500 ft. of streams. The maps showing roads, streams and forest stands are available. Describe the steps you will follow to complete the task using a GIS. Include a flowchart in your answer.	15	
8.	What kinds of data are required as inputs to address geocoding?	5	
9.	How might the Internet be used to improve access to publicly available digital databases and maps produced by federal and state government agencies?	10	

10.	<p>Explain the following terms with examples pertinent to geographic data:</p> <p>a) <i>de facto</i> standard</p> <p>b) <i>de jure</i> standard</p> <p>What are usually called metadata? Give some examples metadata provided along with GIS data.</p>	5	
		5	
		10	
<b>Total Marks:</b>		100	