

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS**

**C5 – GEOSPATIAL INFORMATION SYSTEMS**

**October 2018**

**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.	Describe the difference between a typical computer-aided-design (CAD) program and a true geographical information system.	10	
2.	Describe at least three technologies that can be used to obtain accurate elevation information for input to a GIS ( <b>Note:</b> a brief description of each technology is required).	10	
3.	Why is metadata important to GIS data?	8	
4.	Describe how point-in-polygon overlay works in terms of operation, input and output. Provide an example of a typical point-in-polygon overlay analysis problem.	12	
5.	What is geocoding and why is it important? What are some of the problems that are commonly encountered when performing address matching?	10	
6.	You are asked to find 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. <b>Include</b> a flowchart in your answer.	12	
7.	Explain, with the aid of diagrams, the difference between "systematic" and "adaptive" sampling methods used in digital terrain modeling.	10	
8.	What is raster data and how is it stored in a computer? Describe the run-length encoding method for compressing raster data.	8	
9.	Compare <b>and</b> contrast thin-client and thick-client strategies in designing a web mapping application.	10	
10.	Describe some of the main considerations when choosing a GIS software package.	10	
	<b>Total Marks:</b>	100	