CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C5 – GEOSPATIAL INFORMATION SYSTEMS

March 2021

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

Marks

Time: 3 hours

Q. No		Value	Earned
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 (**Note**: 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 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 clearly the steps you will follow to complete the task using a GIS. **Include** a flowchart in your answer.	12	
7.	Explain, with the aid of diagrams, the difference between "systematic" and "adaptive" sampling methods used in collecting elevation data.	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.	Discuss briefly the impact of the internet on GIS in terms of data, technology and application.	10	
10.	What are the main issues related to the “people” component of a GIS, which we need to be considered in operating a GIS?	10	
	Total Marks:	100	