

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS**

**C5 – GEOSPATIAL INFORMATION SYSTEMS**

**March 2024**

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

**Marks**

**Q. No**

Time: 3 hours

Value Earned

<u>Q. No</u>		<u>Value</u>	<u>Earned</u>
1.	Discuss at least three key features that distinct a fully-fledged GIS from other information systems.	10	
2.	Explain geo-relational database model, that has long been in GIS. How is it different from more recent object-relational database model?	10	
3.	Show how topological data can be stored in a database. Why do we need to store additional data on topology in a GIS database since the position of all required features have already been stored?	10	
4.	What is MBR? Briefly explain why we need MBR in a spatial search such as point-in-polygon search.	10	
5.	Explain, with the aid of diagrams, the difference between "systematic" and "adaptive" sampling methods used in digital terrain modeling.	10	
6.	What is a triangulated irregular network (TIN)? Describe the advantages of TIN over a regular grid-based DEM.	10	
7.	Explain how line-in-polygon operation is performed in GIS. Clearly describe the inputs and output of the operation.	10	
8.	Briefly describe the contents of a metadata standard, and explain why is it difficult to obtain data required for such a standard.	10	
9.	What are the problems we face when integrating GIS data from different sources?	10	
10.	If you are asked to collect information for defining the requirements of a GIS project, list in point form four possible methods you can work with.	10	
	<b>Total Marks:</b>	100	