

**CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS****C5 – GEOSPATIAL INFORMATION SYSTEMS****October 2024****Note: This examination consists of 10 questions on 1 page.****Marks****Q. No****Time: 3 hours****Value   Earned**

|                     |                                                                                                                                                                                      |     |  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--|
| 1.                  | What is GIS? Explain in your own words.                                                                                                                                              | 10  |  |
| 2.                  | What types of data are commonly used in GIS, and how do they differ?                                                                                                                 | 10  |  |
| 3.                  | What are some of the key spatial analysis functions provided by GIS software? Provide examples of how these functions can be applied.                                                | 15  |  |
| 4.                  | Describe three types of topological relationships commonly used in GIS. Provide examples for each.                                                                                   | 10  |  |
| 5.                  | Describe the steps involved in the geocoding process. What are the key components required to successfully geocode an address?                                                       | 10  |  |
| 6.                  | What is a digital elevation model (DEM)? Explain its purpose and how it differs from other types of models, such as digital surface models (DSMs) and digital terrain models (DTMs). | 10  |  |
| 7.                  | Describe the process of performing a raster overlay analysis. What are some common applications of this technique in GIS?                                                            | 10  |  |
| 8.                  | What are the key steps involved in developing a GIS model? Outline each step and explain its importance.                                                                             | 10  |  |
| 9.                  | What is metadata, and why is it critical for GIS data management? What are some key elements that should be included in GIS metadata?                                                | 10  |  |
| 10.                 | How can GIS be used to ensure data privacy while still providing valuable spatial analysis?                                                                                          | 5   |  |
| <b>Total Marks:</b> |                                                                                                                                                                                      | 100 |  |