

# CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

## C5 – GEOSPATIAL INFORMATION SYSTEMS

October 2025

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

**Marks**

**Q.No**

Time: 3 hours

Value Earned

|                     |                                                                                                                                                                       |     |  |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--|
| 1.                  | Explain the distinction between spatial data and attribute data. Provide an example of each and describe how they are linked in a GIS.                                | 10  |  |
| 2.                  | Describe the differences between raster, vector, and object-oriented data models. In what type of application would each model be preferable?                         | 10  |  |
| 3.                  | All map projections introduce distortion. Identify the four types of map distortion and explain how projection choice depends on the intended application.            | 10  |  |
| 4.                  | Discuss the concept of a geodatabase. What are the advantages of using a relational database management system (RDBMS) to manage spatial data?                        | 10  |  |
| 5.                  | Identify three different sources of geospatial data. For each, discuss its advantages, disadvantages, and potential sources of error.                                 | 10  |  |
| 6.                  | Why is data classification important in thematic mapping? Compare natural breaks and equal interval classification methods, including when each might be appropriate. | 10  |  |
| 7.                  | <b>Compare</b> and <b>contrast</b> buffering, overlay, and network analysis as core spatial analysis tools. Give one practical application of each.                   | 10  |  |
| 8.                  | Define positional accuracy, attribute accuracy, and logical consistency. Why are these critical to evaluate before using geospatial data for decision-making?         | 10  |  |
| 9.                  | Discuss at least two ethical or societal concerns related to the collection, analysis, and dissemination of geospatial information. Provide concrete examples.        | 10  |  |
| 10.                 | Discuss one emerging trend in GIS. What opportunities and challenges does this trend present?                                                                         | 10  |  |
| <b>Total Marks:</b> |                                                                                                                                                                       | 100 |  |