

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C5 - GEOSPATIAL INFORMATION SYSTEMS

October 2015

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.	Although sometimes confused, CAD (or AutoCAD) was always clearly distinguished from GIS. Explain why the distinction has become less clear in recent years.	10	
2.	Explain the fundamental differences between raster and vector GIS with respect to the main functions of a typical GIS.	12	
3.	What four types of distortion may be produced when geographic positions are projected onto two-dimensional maps? Which of these factors does a UTM projection retain?	8	
4.	Name the three types of simple features used in GIS and their geometric properties. Describe how each type of feature is <u>represented</u> and <u>stored</u> in GIS.	10	
5.	Define and compare local operation and focal operation that are performed on raster data. Give an example application for each.	10	
6.	Explain how line-in-polygon operation is performed in GIS. Clearly describe the input and output of the operation.	10	
7.	What are the advantages of storing digital terrain in TIN rather than in DEM?	10	
8.	Explain the following terms with special reference to geographic data: <i>de facto</i> standard and <i>de jure</i> standard. Give example standard(s) of each.	10	
9.	Aside from the traditional data collection methods, such as land surveying and photogrammetry, what are some recent approaches that allow quicker and more efficient GIS data collection? Name and briefly describe at least three of these methods.	10	
10.	Give three reasons why "human" or "organizational" considerations may prove a factor in the success or failure of GIS projects in large commercial and government organizations.	10	
Total Marks:		100	