

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

E-1 SPATIAL DATABASES & LAND INFORMATION SYSTEMS March 2011

Note: The use of calculators or similar devices is not permitted in this exam.

Note: This examination consists of 10 questions on 2 pages.

Marks

Q. No

Time: 3 hours

Value Earned

1.	Give three examples of legal issues affecting spatial data.	6	
2.	<p>Translate this conceptual schema (CIM) designed with UML extended for spatial database, in a PIM Relational Database Schema.</p>	15	
3.	Explain with a sketch, three examples of spatial relationships that can exist between two linear roads. Show interior and limits of the lines and name the spatial operator.	9	
4.	Give five metadata that would be useful to include in the data dictionary describing the spatial database.	10	
5.	Give three distinctions between agile and disciplined methods.	9	
6.	Name four basic categories of data types that can be found in database systems.	8	
7.	Give and explain three database optimizations techniques.	6	
8.	Give four database integrity constraints and explain how each of them can ensure the integrity of the database.	8	
9.	<p>Define each of the following:</p> <ul style="list-style-type: none"> a) Data model b) Database Management System c) Database view d) Database schema e) UML f) Foreign key g) Unique constraint 	14	

10.	For each row of the next table, explain the distinction between these two SQL commands (2 pts each row). For each command, give the part of SQL (DDL, DML or QL) it belongs to (0.25 point each command).		15	
	The table Building have the following fields: ID, ADDRESS, TYPE			
	#	SQL no1		SQL no2
	1	DROP TABLE building;		DELETE FROM building;
	2	INSERT INTO building VALUES (102, '45 Main Street, St-John', 'residential');		UPDATE building SET type= 'residential' WHERE id= 102
	3	DELETE FROM building WHERE id = 102;		INSERT INTO building VALUES (102, '45 Main Street, St-John', 'residential');
4	SELECT * FROM building	SELECT address FROM building		
5	ALTER TABLE building ADD (value NUMBER (8));	UPDATE building SET value = 100 000;		
Total Marks:			100	