ASSOCIATION OF CANADA LANDS SURVEYORS - BOARD OF EXAMINERS
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SCHEDULE I / ITEM 5 **October 2005**

DATA BASE MANAGEMENT SYSTEMS (INFORMATICS)

Note: This examination consists of 7 questions on 1 page.

Time: 3 hours

Q. No		Marks Value	Marks Earned
1	What is an "Object-Relational Data Base Management System"? What makes it object-oriented and relational-oriented? Give one example in geomatics where the use of objects (in object-oriented terminology) is advantageous.	12	
2	In a relational database management system, why do we need Primary Keys? Foreign Keys ? Give examples to support your explanation.	15	
3	What is spatial indexing? Why do we use spatial indexing? Describe three methods of spatial indexing.	15	
4	How would you implement the following relationships with the following multiplicity using the relational model (give two solutions for each case)? a) one-to-five b) five-to-five c) recursive one-to-one d) many-to-many with attributes to the relationship ?	20	
5	What are integrity constraints? Give 5 examples of 5 categories of integrity constraints that are very different from each other. What are spatial integrity constraints? Give 3 examples of spatial integrity constraints.	24	
6	What are the steps required to develop a spatial database?	6	
7	What is UML? What is OGC? State what these acronyms stand for and describe what they are. How can they help to deal with spatial databases?	8	
	Total Marks:	100	