ASSOCIATION OF CANADA LANDS SURVEYORS - BOARD OF EXAMINERS
WESTERN CANADIAN BOARD OF EXAMINERS FOR LAND SURVEYORS
ATLANTIC PROVINCES BOARD OF EXAMINERS FOR LAND SURVEYORS

SCHEDULE I / ITEM 5
DATABASE MANAGEMENT SYSTEMS (Informatics)

<u>February 2000</u>
(1990 Regulations)
(Closed Book)

<u>Time: 3 hours</u>   <u>Marks</u>

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

1.	a)	Briefly distinguish between sequential and parallel data processing with simple examples.	5
	b)	What is usually meant by computer platform independence in data processing?	5
			5
2.	a)	What is a quadtree data structure? Illustrate with some simple data.	5
	b)	What is an octree data structure? Illustrate with some simple data.	
			5
3.	a)	What is a good indexing method for quadtrees? Illustrate with some simple data.	5
	b)	What is a good indexing method for octrees? Illustrate with some simple data.	
			5
4.	a)	What is a relational data structure? Comment on the required indexing.	5
	b)	What are relational operators? Give some simple examples of applications.	
			5
5.	a)	Briefly distinguish between the Entity-Relationship and the Object Orientation approaches.	5
	b)	What are some of the key concepts in Object Oriented system development and programming?	
			5
6.	a)	What are usually called metadata? Give some examples in Geomatics.	5
	b)	How are metadata carried in relational and other databases?	

7. a) Sorting operations are very common database operations. Briefly describe some well-known sorting methods. 5

   b) Merging operations are very common database operations. Briefly describe some well-known merging methods. 5

8. a) What is SQL and what are some of its advantages and disadvantages? 5

   b) Give some examples of SQL operations. 5

9. a) What is called database normalization? Why is normalization required? 5

   b) Give some examples of normalization forms or standards. 5

10. Briefly describe some of the special database requirements for GIS applications. Comment on raster imagery and digitized natural features. 10

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