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   March 2002
DATA BASE MANAGEMENT SYSTEMS (INFORMATICS)

Note: This examination consists of _6_ questions on _1_ page.   **Marks**

Q. No	Time: 3 hours	Value	Earned
1	With regards with the management of geospatial data, what are the main differences between an RDBMS, an ORDBMS and a Universal Server ? RDBMS = Relational Data Base Management System ORDBMS = Object-Relational Data Base Management System	15	
2	If a municipal client asks you to build a simple geospatial database that deals with Parcels (number, area, assessed value, mapped as a polygon), Buildings (street address, use, assessed value, mapped as a polygon), Owners (name, address of residence, date of birth) and ownerships of parcels and buildings (they may be different for a parcel and the building(s) located on it), how would you describe his demand with a conceptual database schema (you can use UML or Entity-Relationship modeling technique) ? N.B. a building is always entirely contained within a parcel, but you may have several buildings on a same parcel. A Parcel may have no Building on it. One person may own several buildings, parcels or both and may reside in another municipality. There may be co-owners. N.B. you must specify in your database conceptual schema what will be represented cartographically and what geometry will be used (point, line, polygon).	20	
3	How would you implement the database described above with an RDBMS and a GIS of your choice (what would be the tables and columns required, how would you create the link with the map)? (you can use a relational schema, a textual description or SQL commands)	25	
4	Identify 3 major differences between transactional databases and data warehouses? With datamarts ? With regards to geospatial data, what data integration problems would you see when feeding the warehouse ?	20	
5	How can these standards help you build your geospatial database: ISO/TC211, Open GIS, XML Schema, UML ?	12	
6	Give an example of a web site or application that uses a geospatial database and explain what types of geospatial services it offers.	8	
	Total Marks:	100	