SCHEDULE I / ITEM 5   September 2002

DATA BASE MANAGEMENT SYSTEMS (INFORMATICS)

Note: This examination consists of _7_ questions on _1_ page.   <u>**Marks**</u>

Q. No	Time: 3 hours	Value	Earned
1.	Define "Data Base Management System" and explain five major reasons to use a DBMS.	15	
2.	Can a DBMS be used "as is" for spatial data warehousing? Explain your answer.	10	
3.	What are the steps required to analyze, design and develop a DBMS application? Can they be executed without modification for spatial databases? Which modifications or extensions would facilitate the analysis, design and development of spatial database?	20	
4.	If a client in forestry asks you to build a simple geospatial database that deals with forests (name, total area, perimeter, % of unexploitable land, average area of included forest stands, mapped as polygon), individual forest stands (number, area, perimeter, exploitable:yes/no, trees dominant species, mapped as a polygon), Buildings (camp name, building number, use, mapped as a point), Building owners (name, address of residence, category:private/public), ownership of the forests and exploitation rights (ownership and exploitation rights may be different for the same forest), how would you describe his demand with a conceptual database schema (you can use UML or Entity-Relationship modeling technique)? N.B. A Forest may have no Building on it. One owner may own several buildings, but there is no co-ownership. Ownership is unique for a forest, but there may be several rights allowing the exploitation of the same forest, for example for different areas or different purposes). 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	
5.	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	
6.	What are the main differences between a typical GIS such as ArcView and a universal server such as Oracle 9i ?	5	
7.	Give an example of a web site or application that uses a geospatial database and explain what types of geospatial services it offers.	5	
	Total Marks:	100	