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SCHEDULE I / ITEM 6   **September 2002**

MAP PROJECTIONS AND CARTOGRAPHY

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Note: This examination consists of _9_ questions on _1_ page.   **Marks**

Q. No	Time: 3 hours	Value	Earned
1.	What information and data manipulation is necessary to locate the elements of several, independently made, large-scale "as-built" plans (e.g. several plans of pipeline sections at the scale 1:250) on a small-scale topographic map (e.g.1:50,000) for a very large region such as a Province? How one can minimize this integration effort by proper a priori planning?	20	
2.	Explain the complete mapping process that takes place when one measures very precisely the position of several points on the Earth, produces a map with these data, plans the building of a new infrastructure (e.g. a bridge), and goes back to the field to implement this new infrastructure. Identify the information needed and the data manipulation required.	20	
3.	Why are there different map projections? Different datums? Different coordinate systems? What is the impact on integrating data from different maps into a GIS?	10	
4.	Several GIS packages offer a function called "address matching". Define what "address matching" is and analyze the mapping precision of address matching.	5	
5.	Two of the major divisions or classifications of map projections in common use are "conformal" and "equivalent". Define these two terms. There also exist hybrid projections. Define what a hybrid projection is and what is an aphylactic projection.	10	
6.	The Federal Government uses the UTM projection for topographic maps at the scale 1:50,000. What are the characteristics of this projection: a) planar or cylindrical or conic projection? b) tangent or secant to the ellipsoid? c) scale factor at the central meridian is 0.9996 or 1.0000 or 1.0004? d) normal or transverse or oblique projection? e) X value at the central meridian is 0 m. or 304,800m. or 1,000,000 m.?	10	
7.	Maps can be represented in vector and raster formats. Describe each format. Select the best format for a GIS application dealing with a large-scale municipal application where individual objects have attributes and may be linked to objects not represented on the map (ex. to the owner of a building).	10	
8.	Precisely speaking, is the scale a constant value in a 1:50,000 map? Explain.	10	
9.	What is the role of the toponymy on a topographic map? What are the difficulties related to name placement on a map?	5	
	Total Marks:	100	0