

**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 6

March 2003

MAP PROJECTIONS AND CARTOGRAPHY

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

Marks

<u>Q.No</u>	<u>Time: 3 hours</u>	<u>Value</u>	<u>Earned</u>
1	What is a map projection? What is it used for? Why do different map projections exist? Describe 2 examples of map projections of your choice, with their mathematical parameters.	25	
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 (ex. a bridge), and goes back to the field to implement this new infrastructure. Identify the information needed and the data manipulation required.	20	
3	In cartography, what is "semiology"? What are visual variables? What are nominal, ordinal, interval and ratio scales? How do they relate to visual variables?	20	
4	What is the National Topographic System used to index map sheets in Canada? Explain how it works. Was it influenced in one way or another when the Canadian Government changed from the North American Datum 1927 to the North American Datum 1983? If yes, explain why.	10	
5	In numerous books about cartography, you will read that mapping is both a science and an art at the same time. Why?	5	
6	Precisely speaking, when a GIS uses a constant value for the scale of a map over the complete territory, does it use the exact value? Explain.	10	
7	The Federal Government uses the Universal Transverse Mercator projection for topographic maps at the scale 1:50,000 while some Provincial Governments use the Modified Transverse Mercator projection (also called 3TM) at the scale 1:20,000. If a client wants a map of a remote area where the map coverage at the scale 1:20,000 is not complete, how would you integrate data from map sheets in 1:20,000 with data from adjacent map sheets at 1:50,000?	10	
	Total Marks:	100	