

**ASSOCIATION OF CANADA LANDS SURVEYORS
BOARD OF EXAMINERS**

**PROFESSIONAL EXAMS - ITEM 1
ACTS AND REGULATIONS RELATING TO SURVEYS OF CANADA LANDS**

March 2011

(March 18, 1999 Regulations)

Notice to Candidates:

This examination is based on the General Instructions for Surveys, e-Edition issued by the Surveyor General of Canada Lands.

This examination consists of 11 questions on 3 pages.

Note: The use of calculators or similar devices is not permitted in this exam.

<u>Q. No</u>	<u>Time: 3 hours</u>	<u>Marks</u>	
		<u>Value</u>	<u>Earned</u>
1.	A newly-commissioned Canada Lands Surveyor is investigating the possibility of opening a corporate geomatics practice in Iqaluit, Nunavut. What requirements of the <i>Canada Lands Surveyors Act</i> must be met if he proceeds with his plan?	6	
2.	<p>Two locators - one having a quartz mining focus, the other having a placer mining focus - each locate a claim of the full size in Yukon on the same day, the quartz claim staking having been completed first. The two claims are within 1,000 feet of each other. Both locations are in full compliance with the prevailing legislation. The area is 65 miles from the office of the appropriate mining recorder and there is a history of previous quartz and placer claims having been granted in the same area.</p> <p>a) What are the maximum dimensions of the quartz mining claim that will be applied for?</p> <p>b) What are the maximum dimensions of the placer mining claim that will be applied for?</p> <p>c) For each of the two claims, list the information that the locator will place on his Post No. 1.</p> <p>d) How soon can each locator establish a second claim adjoining his original claim?</p> <p>e) Subsequent exploration activity in the placer creek by non-related parties results in the staking of additional creek and bench claims in the area of the first recent claim. The owner of that first claim decides to have it surveyed by a Canada Lands Surveyor. The CLS encounters the location line for the quartz claim, ties in its legal posts and determines that the southwest corner of the placer claim is overlapped by the quartz claim. Assuming any other information required, draw a neat sketch showing the configuration of the claims and outline in a colour the resulting boundary the CLS will survey for the placer claim.</p> <p>f) What must the placer locator do to keep his claim in good standing for a further year?</p> <p>g) What must the quartz locator do to keep his claim in good standing for a further year?</p> <p>h) On the sketch prepared in e) above, indicate by solid circles all official monuments that will appear on the plan and field notes of survey for the placer claim.</p> <p>i) What type of monument would the CLS utilize for this type of survey?</p> <p>j) Describe the main steps in resolving any adverse claims in order to obtain a certificate of improvements for the quartz claim.</p>	<p>2</p> <p>2</p> <p>4</p> <p>4</p> <p>7</p> <p>2</p> <p>2</p> <p>4</p> <p>2</p> <p>6</p>	

3.	Draw a neatly labelled sketch in conformance with the Canada Oil and Gas Land Regulations showing Grid Area 70°00', 85°45' and the Grid Areas lying immediately east and north of that Grid Area. Show the Section numbering along the outer boundaries of each Grid Area. Do not show Unit designations.	6	
4.	<p>a) What limitation is there on the creation of a boundary between two points depicted on a compiled plan of Canada lands?</p> <p>b) Give two purposes for which a compiled plan may be prepared in the general case of Canada lands.</p> <p>c) Under what circumstances might specific survey instructions exempt the geo-referencing of a survey of Canada lands?</p> <p>d) In the Northwest Territories and Nunavut Mining Regulations, what limitation is placed on a licensee in staking a claim on lands the surface of which is subject to a grant or lease by Her Majesty?</p>	2 2 2 2	
5.	<p>As a Canada Lands Surveyor in private practice in the Yukon, you have been engaged by a corporation to make a location line survey of a block of 96 quartz mining claims of the full size that it has assembled either by staking or purchase from other locators. The various sketches for the groups of claims in the block show the clear intention of locating 12 claims from each of eight parallel location lines, six claiming left and six claiming right from each line. The location lines are shown on each locator's sketch to have a bearing of approximate astronomic north.</p> <p>Upon completing the survey, you determine that there are many location lines that slightly exceed the maximum allowable length, and that several of the intended parallel location lines are more than 3,000 feet perpendicularly apart in places.</p> <p>a) What will you recommend to your client, and why, with respect to the "open" areas of ground in the claim block?</p> <p>b) At the present time, your client does not wish to proceed to a full legal survey. Describe the actions you would take in documenting and preserving the evidence obtained in your field survey.</p>	4 4	
6.	<p>a) What projection is used to represent the shape of the earth for the UTM projection in North America?</p> <p>b) What are the two coordinate axes for a UTM zone?</p> <p>c) For the computation of plane coordinates in the UTM projection where long sight lines are involved, explain the purpose of the "t-T" formula.</p>	2 2 2	
7.	<p>a) A rectangular mineral claim in the Northwest Territories is located pursuant to the Northwest Territories and Nunavut Mining Regulations. The width of the claim is 4,500 feet. What is the maximum allowable length of the claim?</p> <p>b) Name the earlier legislation that would have governed a similar claim.</p>	4 2	
8.	<p>A parcel of land in a residential area of Carcross, Yukon is privately owned and is occupied by a residential dwelling. The owner wishes to subdivide the parcel - Lot 7, Block 6 - to create two lots, one containing his residence and the other to be advertised for sale. He engages a Canada Lands Surveyor to undertake the necessary work for him to be able to complete his subdivision.</p> <p>a) Describe the work that the CLS should undertake as a first step.</p> <p>b) What approvals are necessary for the subdivision survey to proceed?</p> <p>c) Using assumed information as necessary, draw a neat diagram that would be fully sufficient for the body of the resulting combined plan and field notes of the subdivision survey.</p>	3 2 5	

9.	<p>a) Which of federal or provincial survey standards applies for legal surveys of Canada lands within a province for National Park Reserve purposes?</p> <p>b) The GIS-e requires the Canada Lands Surveyor to take specific action on the completion of the field work of a legal survey of National Park boundaries. Describe this action.</p>	2 2	
10.	<p>a) What is the maximum spacing for monuments to be established on a long straight boundary in a survey of Canada lands?</p> <p>b) What is a "notification" prescribed in the <i>Territorial Lands (Yukon) Act</i>?</p> <p>c) Under the <i>Land Titles Act (Yukon)</i>, at what point in time does a filed and registered plan of survey become binding on the party filing or registering it or on any other person?</p>	2 2 2	
11.	<p>a) What four conditions must be met to enable a surveyor may adopt the boundary of a prior official survey without actual retracement?</p> <p>b) List the geometric elements that must be shown for a non-tangential circular curve on the official field notes for a survey.</p>	2 3	
Total Marks:		100	