

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

C12 - HYDROGRAPHIC SURVEYING		<u>March 2024</u>	
Note: This examination consists of 10 questions on 1 page.		Marks	
<u>Q. No</u>	<u>Time: 3 hours</u>	<u>Value</u>	<u>Earned</u>
1	How is sound velocity determined from a CTD profile?	5	
2	Draw a typical sound velocity profile from the warm upper layers, through the thermocline to the deep ocean.	10	
3	What systems would see transducers mounted on a boom? Use a diagram to help with your answer.	5	
4	You are tasked with planning a singlebeam survey to IHO S-44 order 1B. The survey is in less than 10 m of water, in a coastal region, with both hard and soft bottom. Describe the equipment and methods you would use (with your reasoning) to conduct this survey.	10	
5	What is a calibration surface and what is it used for?	10	
6	You are tasked to select water level gauge site along a lake/river system that includes two lakes connected by a river. The upstream lake has a dam. Where would you place your water level monitoring stations?	10	
7	Describe 4 different non-tidal water level effects	10	
8	Why is vessel heading essential for multibeam operations and not as critical for singlebeam operations?	10	
9	With the use of diagrams, describe the four main errors that a “patch test” is designed to address. Make sure you include where, how and why the patch test lines are run.	10	
10	You are planning a hydrographic/topographic survey for a bridge over a river. What information would you collect and what equipment would you use? What would you use for the vertical datum and how would you establish it?	20	
		100	