

CANADIAN BOARD OF EXAMINERS FOR PROFESSIONAL SURVEYORS

E4 – ADVANCED REMOTE SENSING

March 2025

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.	Write at least 5 advantages and 5 disadvantages of airborne remote sensing platforms.	10	
2.	a) Calculate the number of flight lines for a 5 km wide project area for a customer requiring 40% side-lap, if a sensor mounted on an aerial platform has 1,000 pixels per line having a spatial resolution of 30 cm on ground. b) Calculate the number of images per flight lines for 10 km long project area for a customer requiring 50% forward-lap if a sensor mounted on an aerial platform has 1,000 pixels per line, 1,000 lines per image having a spatial resolution of 30 cm on ground.	10	
3.	Write at least 10 points to differentiate Whisk Broom and Push Broom Scanners.	10	
4.	What is geometric correction in remote sensing? Write three methods of geo-referencing of a remote sensing image.	10	
5.	What is digital filtering on remote sensing? Briefly explain four digital filters commonly used in remote sensing.	10	
6.	Briefly describe 7 visual interpretation keys.	10	
7.	Explain NDVI, its formula, and its uses. What Landsat 8 band combinations are used for calculating NDVI?	10	
8.	Briefly explain Image subtraction and Image ratio techniques for temporal analysis.	10	
9.	Explain the concept and applications of multi returns in LiDAR signal.	10	
10.	Explain different types of errors in LiDAR point cloud data.	10	
Total Marks:		100	