Total No. of Printed Pages: 2

PRN No.		PAPER CODE	U313-225-B-E31

December 2023 (ENDSEM) EXAM

TY B. TECH -CIVIL ENGINEERING (SEMESTER - I)

COURSE NAME: ADVANCED SURVEYING **COURSE CODE: CVUA31205B**

(PATTERN 2020)

Time: [1Hr. 30 Min] **[Max. Marks: 40]**

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data wherever required**
4) **All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4,5 and 6 respectively.**

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Explain Spherical Excess.	[2]	1	Remember
Q2	a) Define the following terms: True value and Residual Error.	[2]	2	Remember
Q3.	a) List various potential error sources that affect GPS signal. Explain how will you eliminate any one of them?	[6]	3	Apply
	b) What is reference ellipsoid? Why is it required for mapping / positioning?	[6]	3	Apply
Q.4	a) Explain with example Active and Passive remote sensing.	[5]	4	Apply
	b) List different types of resolutions and explain importance of spectral resolution in interpretation of an image.	[5]	4	Apply
	c) Explain how remote sensing helps us better understand climate change?	[5]	4	Apply
Q.5	a) Explain the advantages and disadvantages of Raster data and Vector data.	[5]	5	Apply
	b) What is GIS. State various GIS software's and explain how remote sensing and GIS are linked.	[5]	5	Apply
	c) Explain three basic kinds of vector entities with examples.	[5]	5	Apply

Q.6)	a) State giving reasons whether the statements are True or False. i) An oblique photograph is Unintentionally titled. ii) Principal point of the photograph is affected by relief displacement. iii) On an aerial photo, scale of every point is same.	[5]	6	Apply
	b) A scale of aerial photograph is 1:10000, effective at an average elevation of terrain of 500m. The size of aerial photograph is 230 mm× 230 mm. Focal Length of camera is 20 cm. Speed of aircraft is 180 kmph, longitudinal overlap is 60% and side overlap is 30%. Determine the number of photographs required for the area of 30 km × 22.5 km. Also determine the exposure interval and flying height.	[5]	6	Apply
	c) A tower, lying on a flat area having an average elevation of 800 m above msl, was photographed with a camera having a focal length of 24 cm. The distance between the images of top and bottom of the tower measures 0.34 cm on the photograph. A line AB, 200 m long on the ground, measures 12 cm on the same photograph. Determine the height of the tower if the distance of the image of the top of the tower is 8.92 cm, from the principal point.	[5]	6	Apply