Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Third Semester

Civil Engineering

UCETL24301- Advanced Surveying

Regulations - 2024

Duration: 3 Hrs *Maximum: 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q.No	*Questions*	*BTL*	*CO*	*Marks*
1.	Write the principles of surveying.	L1	1	2
2.	Define bearing and its significance.	L1	1	2
3.	Define benchmark.	L1	2	2
4.	State the methods of reduction.	L1	2	2
5.	State the stadia constant.	L1	3	2
6.	Define single plane method.	L1	3	2
7.	State the applications of Gale's table.	L1	4	2
8.	Define Triangulation.	L1	4	2
9.	Define GPS.	L1	5	2
10.	State the principles of Total station.	L1	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	Explain the methods of chaining with neat sketches and describe its error.	L2	1	16
		Or			
	b	Explain the three-point problem in plane table surveying with neat sketch.	L2	1	16
12.	a	The following consecutive readings were taken with a level and 5-meter levelling staff on continuously sloping ground at a common interval of 20 meters: 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110 and 4.485. The reduced level of the first point was 208.125m. Calculate the reduced levels of the points by rise and fall method and also the gradient of the line joining the first and the last point.	L3	2	16
		Or			

	b	The following staff readings were taken in a levelling operation. Enter the readings in level book form and determine the reduced level of each station by the line of collimation method. Take RL of station A as 92.650m. Apply the check.	L3	2	16

Staff reading	Remarks
1.175	BS to A
1.205	IS to B
1.290	IS to C
1.390	FS to D

13.	a	Find the elevation of the top of a chimney from the following data.	L3	3	16

Instrumentation Station	Reading in BM	Angle of Elevation	Remarks
A	0.862	18°36'	RL of BM=421.380 m
B	1.222	10°12'	Distance B=50 m

Or

	b	Consider a tower whose height is inaccessible. Find the height of the tower using a suitable surveying method.	L3	3	16
14.	a	The following are the three angles A, B, C, observed at a station X closing the horizon. Determine the probable errors of measurement. Determine their corrected values. A = 78°12' 10" ±2" B = 136°48'32" ±3" C= 144 °59'08 " ±5' '	L4	4	16

Or

	b	The following are the traverse data for a closed traverse ABCDA:	L4	4	16

Line	Bearing	Length (m)
AB	45°	150
BC	120°	23
CD	200°	180
DA	300°	170

Compute the latitudes and departures using Gale's Table method and Find the closing error and adjust the traverse.

15.	a	Illustrate the fundamental measurement system of total station.	L2	5	16

Or

	b	Explain the field procedure and applications of GPS in surveying.	L2	5	16