Course Code: 23ES3T01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

II - B. Tech I-Semester Supplementary Examinations (BR23), Mar - 2026

SURVEYING (CE)

Time: 3 hours | Max. Marks: 70

Question Paper consists of Part-A and Part-B

*Answer **ALL** the questions in **Part-A and Part-B***

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	What are the principles of surveying	(2M)	CO1	BL2
b)	List out the accessories for chaining	(2M)	CO1	BL1
c)	What are the different types of levels?	(2M)	CO2	BL1
d)	Distinguish between the Line of Collimation and the Line of Sight	(2M)	CO2	BL2
e)	Write the principles of the electronic Theodolite?	(2M)	CO3	BL2
f)	Define traverse	(2M)	CO3	BL1
g)	Define tachometric surveying.	(2M)	CO4	BL1
h)	What are the different types of curves?	(2M)	CO4	BL1
i)	What is an aerial photograph?	(2M)	CO5	BL1
j)	What is EDM in surveying?	(2M)	CO5	BL1

PART–B (5X10 = 50M)

2a.	What are the different sources of errors in plane tabling? How are they eliminated?	5(M)	CO1	BL2
b.	What is the two-point problem? How is it solved?	5(M)	CO1	BL3
	(OR)			
3a.	Explain the difference between traverse surveying and the chain surveying	5(M)	CO1	BL2
b.	The fore bearings of the four lines AB, CD, EF, GH, respectively, are as follows: i) S25°30'W ii) N30°W iii) S40°30'W iv) N70°45'W.Calculate the back bearing?	5(M)	CO1	BL3
4	The following consecutive readings were taken with a dumpy level 1·895, 1·500, 1·865, 2·570, 2·990, 2·020, 2·410, 2·520, 2·960, 3·115. The level was shifted after the fourth, sixth and ninth readings. The R.L. of the first point was 30·500. Rule out a page of your answer book as a usual level book, and fill in all columns. Use the collimation system and apply the usual checks. Indicate the highest and lowest points.	10(M)	CO2	BL3
	(OR)			
5a.	What is the indirect method of locating contours? Explain the step-by-step procedure of locating contours by the method of squares.	10(M)	CO2	BL2

6	Determine the R.L. of the top of a transmission tower from the following observations:		10(M)	CO3	BL3

Inst. station	Vertical angle of the top of tower	Staff-reading on B.M.	R.L. of B.M.
A	18° 30′	2·815 m	105·00 m
B	12° 40′	1·865 m	

Also, determine the distance between Station A and the transmission tower. The distance between stations A and B is 60 m. The stations A, B and the tower are in the same vertical plane.

(OR)

7a.	Explain the temporary adjustments of a theodolite	5(M)	CO3	BL2
b.	Explain the measurement of horizontal angles using the repetition method.	5(M)	CO3	BL2
8a.	Two straights intersect at a deflection angle of 80° and are connected by a circular curve of radius 2 chains.	10(M)	CO4	BL3

Find:

1. Length of each tangent
2. Length of the curve
3. Long chord
4. Apex distance
5. Mid ordinate of the curve

(OR)

9	Describe the Total Station instrument and explain its components and functions.	10(M)	CO4	BL2
10a	Explain the basic concepts of photogrammetry surveying.	10(M)	CO5	BL2

(OR)

11a	Explain aerial triangulation.	5(M)	CO5	BL2
b.	Explain radial triangulation	5(M)	CO5	BL2

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