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CBCS SCHEME

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BCV302

Third Semester B.E/B.Tech. Degree Examination, June/July 2026
Engineering Survey

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. Missing data, if any, may be suitably assumed.

		Module – 1	M	L	C
1	a.	What is Surveying? List the different types of surveying.	8	L1	CO1
	b.	Discuss on plane and geodetic surveying.	6	L2	CO1
	c.	What is Plane Table Surveying? List the advantages and disadvantages of plane table surveying.	6	L2	CO1
		OR			
2	a.	Compare the following types of surveying : i) Chain surveying and compass surveying ii) Topographical survey and construction surveying.	8	L2	CO1
	b.	Explain the principle of EDM technique.	6	L1	CO1
	c.	Differentiate between : i) Meredian and Bearing ii) Fore bearing and Back Bearing iii) Laser distance meter and distance measuring wheel.	6	L2	CO1
		Module – 2			
3	a.	The following staff readings were taken with a level. The instrument having been moved after the 4th, 7th and 10th readings. The RL of first point on BM was 100.00 m. Rule out a page of level field book and enter the below readings. Compute the reduced levels by HI method. 2.650, 3.740, 3.830, 5.270, 4.640 0.380, 0.960, 1.640, 2.840, 3.480, 4.680 and 5.260.	8	L3	CO2
	b.	List the accessories and advantages of total station.	6	L1	CO2
	c.	Compare the following related to theodolite : i) Swinging and Transiting ii) Face left and face right iii) Trunnion axis and line of sight.	6	L1	CO2

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OR

4	a.	With the neat sketch define the following terms related to leveling. i) Level surface ii) MSL iii) Elevation iv) Vertical angle.	8	L1	CO2
	b.	What are the fundamental measurements of total station? With the help of sketch, explain the calculation of RL of point by total station.	7	L2	CO2
	c.	The reduced level of a factory floor is 30.00 m and the staff reading on the floor is 1.40 m. The staff reading when held inverted with the bottom touching beam of roof is 3.67 m. Find the height of beam above the floor.	5	L2	CO2

Module – 3

5	a.	Discuss the method of longitudinal and cross sectioning using a level with sketches.	8	L2	CO3
	b.	Define the terms with a sketch : Contours, horizontal equivalent, contour interval.	6	L1	CO3
	c.	Explain the process of data transferring from total station along with field data in excel format.	6	L2	CO3

OR

6	a.	What are the applications of contouring? Explain any two of them.	8	L2	CO3
	b.	Explain the importance of following during total station surveying : i) Back-sight data ii) Creating a job iii) Laser/optical plummet iv) Coordinates data.	8	L2	CO3
	c.	List the types of measurements form 'Survey Basic' mode of operation in total station.	4	L1	CO3

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Module – 4

7	a.	Two straights 'AV' and 'BV' meet at a chainage of 3450.0 m. Calculate the necessary data required to set simple circular curve of radius 250.00 m and deflection angle of 50°, by Rankine's Method. Consider peg interval as 20 m.	10	L3	CO4
	b.	List the different types of vertical curves with sketches.	6	L2	CO4
	c.	From the contour map of a reservoir, the following contour areas were obtained. Find the capacity of reservoir by trapezoidal rule. Contour (m): 200, 195, 190, 185, 180 Area (m^2): 3850, 3450, 2600, 800, 450	4	L3	CO4

OR

8	a.	A railway embankment is 10 m wide with side slopes 1.5 : 1. Assuming the ground to be level in a direction transverse to the centre line, calculate the volume contained in a length of 120 meters, the centre heights at 20 m intervals being in meters 2.20, 3.70, 3.80, 4.00, 3.80, 2.80, 2.50 m. Use both trapezoidal and prismoidal rule.	10	L3	CO4
	b.	Explain the method of setting out of a rectangular building by centerline method along with a sketch.	6	L2	CO4
	c.	Sketch out a reverse curve and show the different elements of it.	4	L2	CO4

Module – 5

9	a.	Explain the steps in drone surveying.	8	L2	CO5
	b.	List the applications of RS and GIS in civil engineering.	6	L2	CO5
	c.	Discuss on 'Gagan' system in India.	6	L2	CO5

OR

10	a.	Explain the applications of DGPS in engineering survey.	8	L2	CO5
	b.	List the applications and advantages of drone surveying.	6	L2	CO5
	c.	Name the types of sensors used in drone surveying.	6	L2	CO5

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