CBCS SCHEME

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BCV302

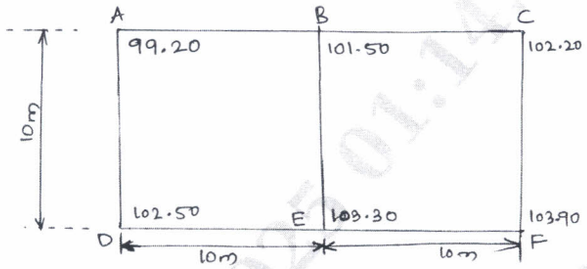
Third Semester B.E/B.Tech. Degree Examination, Dec.2024/Jan.2025
Engineering Survey

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.

		Module – 1	M	L	C
1	a.	What is Surveying? Explain the principles of surveying.	8	L2	CO1
	b.	Compare between : i) True and magnetic bearing ii) Plane and geodetic surveying iii) Cadastral and hydrographic surveying.	6	L1	CO1
	c.	Write the advantages and disadvantages of plane table surveying.	6	L1	CO1
		OR			
2	a.	Discuss on importance of surveying in civil engineering.	6	L2	CO1
	b.	Explain the different methods of measuring distances with examples.	6	L2	CO1
	c.	Differentiate between : i) Chain and chainage ii) Laser distance meter and distance measuring wheel iii) EDM and GPS iv) Topographical and construction survey.	8	L1	CO1
		Module – 2			
3	a.	The following consecutive readings were taken with a level and a 4m staff on a continuously sloping ground at a common interval of 20m : 0.780, 1.535, 1.955, 2.430, 2.985, 3.480, 1.155, 1.960, 2.365, 3.640, 0.935, 1.045, 1.630 and 2.545. The RL of first point A was 180.750m. Rule out a page of level field book and enter the above readings. Compute the RL's by HI method. Also calculate the gradient of the line joining the first and last points.	10	L3	CO2
	b.	List the salient features of total station.	6	L2	CO2
	c.	Why fly and flyback leveling is required?	4	L2	CO2
		OR			
4	a.	Explain the temporary adjustments of dumpy level.	6	L2	CO2
	b.	Explain the method of measuring horizontal angle by repetition method along with the tabular column.	10	L3	CO2
	c.	Discuss on different fundamental measurements of total station.	4	L1	CO2
		Module – 3			
5	a.	What are contours? Explain the characteristics of contours with neat sketches.	10	L3	CO3
	b.	Brief on longitudinal and cross-sectioning with typical sketches.	8	L2	CO3
	c.	What are the input data required while creating job file in total station?	2	L1	CO3

OR

6	a.	Plot the contours of RL 100.00, 101.00, 102.00, and 103.00 in the given square blocks of 10 m × 10 m. The reduced levels of guide points are given in Fig.Q6(a).  Fig.Q6(a)	10	L3	CO3
	b.	Explain the following related to total station : i) Back sight data ii) Coordinates data iii)Command to plot contours in auto CAD. iv)Data transferring.	4	L2	CO3
	c.	Explain the procedure and select the contour internal.	6	L2	CO3

Module – 4

7	a.	Calculate the necessary data for setting out simple curve of radius 300m with the deflection angle of 50° 30′. The two tangents intersect at a chainage of 1192.00m. Take peg interval as 20m and tabulate the results using Rankine's method.	6	L3	CO4
	b.	List the different types of curves.	4	L1	CO4
	c.	The following perpendicular offsets were taken from chain line to an irregular boundary. Calculate the area enclosed by trapezoidal rule. Chainage (m): 0 | 30 | 60 | 90 | 120 | 150 | 180 | 210 Offset (m): 0 | 2.65 | 3.80 | 3.75 | 4.65 | 3.60 | 5.0 | 5.80	10	L2	CO4

OR

8	a.	A railway embankment is 10m wide with side slopes 1.5 to 1.0. Assuming ground to be level in a direction transverse to center line, calculate the volume contained in a length of 120 meters, the centre heights at 20m intervals being are 2.2, 3.7, 3.8, 4.0, 3.8, 2.8 and 2.5m. Use both trapezoidal and prismoidal method.	10	L3	CO4
	b.	Sketch out a compound curve and show the elements of it.	4	L2	CO4
	c.	Define the following related to setting out works : i) Stake ii) Post iii) Batter – board iv) Sight rail.	6	L1	CO4

Module – 5

9	a.	Discuss on the various segments of GPS.	8	L2	CO5
	b.	List the applications of RS and GIS in civil engineering.	6	L1	CO5
	c.	List out the steps in drone surveying.	6	L1	CO5

OR

10	a.	Discuss on GPS receivers.	8	L2	CO5
	b.	List the features and applications of drone surveying.	8	L1	CO5
	c.	Name the type of sensors used in drone surveying.	4	L1	CO5

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