CBCS SCHEME

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BCV302

Third Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

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
Q.1	a.	Define surveying. Mention the objectives and importance of surveying.	5	L2	CO1
	b.	Write a short notes on : (i) Electronic distance measurement (ii) Distance measuring wheel.	10	L2	CO1
	c.	Differentiate between Prismatic and Surveyor compass.	5	L2	CO1
		OR			
Q.2	a.	Define : (i) Hydrographic Survey (ii) Underground Survey (iii) Control Survey (iv) Cadastral Survey	8	L2	CO1
	b.	Explain briefly about advantages and disadvantages of plane table surveying.	6	L2	CO1
	c.	Explain briefly the various types of tapes.	6	L2	CO1
		Module – 2			
Q.3	a.	The following staff readings were observed with a level. The instrument having been moved after third, sixth and eighth reading. Enter readings and calculate the RL of the points by line of collimation method if first reading was taken at a staff held on BM 432.380m, 2.225, 1.600, 0.985, 2.090, 2.865, 1.260, 0.605, 1.980, 1.045, 2.685	10	L3	CO2
	b.	Explain the terms used in Theodolite surveying.	5	L2	CO2
	c.	Mention the advantages and limitations of Total station.	5	L2	CO2
		OR			
Q.4	a.	The following data shown in table were recorded from 4.00 m leveling staff with the dumpy level between two main stations A and B. The bench mark of station A is 650.450 m determine the reduced level of station B and conduct the necessary arithmetic checks.	8	L3	CO2
	b.	With the help of a tabular column explain the procedure for finding the horizontal angle by repetition method.	6	L2	CO2
	c.	Explain the features of total station.	6	L2	CO2

Sl.No.	Description about leveling staff reading
1	First reading at A = 0.685
2	Reading before changing the dumpy level = 3.850
3	Reading after changing the dumpy level = 0.920
4	Reading before changing the dumpy level = 3.545
5	Reading after changing the dumpy level = 0.945
6	Reading at B

		Module – 3			
Q.5	a.	Brief out the applications of contour in civil engineering.	10	L2	CO3
	b.	Explain longitudinal sectioning and cross sectioning.	10	L2	CO3
		OR			
Q.6	a.	Write short notes on creating job files and coordinate data recording in total station.	10	L2	CO3
	b.	Define Contour and list the characteristics of Contour.	10	L2	CO3
		Module – 4			
Q.7	a.	Two tangents intersect at chainage 1190m, the deflection angle being 36° calculate all the data necessary for setting out a circular curve with radius of 300m by Rankine's method of deflection angle. The peg interval is 30m.	12	L3	CO4
	b.	A series of offsets were taken from a chain line to a curved boundary line at intervals of 15m in the following order, 0, 2.65, 3.80, 3.75, 4.65, 3.60, 4.95, 5.85, 5.60 m. Compute the area between the chain line, curved boundary and the end offsets by, (i) Trapezoidal rule (ii) Simpson's rule.	8	L3	CO4
		OR			
Q.8	a.	A simple circular curve is to have a radius of 573 m the tangent intersect at chainage of 1060m and the angle of intersection is 120°, find the (i) Tangent distance (ii) Degree of the curve (iii) Chainage at beginning and end of the curve.	8	L3	CO4
	b.	A road embankment is 10m wide at the formation level and has a side slope of 2 : 1 the ground level at every 80m along a centre line are shown in the table the formation level at zero chainage is 123.00 and embankment having a raising gradient 1 in 100. Calculate the volume of earthwork by prismoidal method. All readings are in m.	12	L3	CO4
		Module – 5			
Q.9	a.	Define GPS. With a neat sketch, explain the segments of GPS.	8	L2	CO5
	b.	Explain the advantages and applications of drones in surveying compared to conventional method.	8	L2	CO5
	c.	Describe different types of drones commonly used in surveying.	4	L2	CO5
		OR			
Q.10	a.	Define Remote Sensing. Explain the applications of Remote Sensing and DGPS in Engineering Survey.	10	L2	CO5
	b.	Discuss the types of output maps generated through drone surveying.	6	L2	CO5
	c.	Discuss the importance of DGPS markers in ensuring survey accuracy.	4	L2	CO5

Distance	0	80	160	240	320
RL	120.8	122.5	123.4	123.8	124.5

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