Course Code: 23ES3T01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
II-B.Tech I-Semester Regular Examinations (BR23), November - 2024
SURVEYING (CIVIL)

Time: 3 hours   Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-AandPart-B

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	Define surveying and explain the objectives of surveying	(2M)	CO1	BL1
b)	The magnetic bearing of a line is S 280 30' E. Calculate the true bearing if the magnetic declinations are 50 38' East and 50 38' West.	(2M)	CO1	BL4
c)	Explain profile levelling and cross-sectioning levelling.	(2M)	CO2	BL3
d)	Write the characteristics of contours	(2M)	CO2	BL3
e)	Define the terms i) face left and face right observations. ii) swinging and transiting the telescope	(2M)	CO3	BL1
f)	Recall the instrumental errors in a theodolite?	(2M)	CO3	BL2
g)	What are the principles of tachometric surveying?	(2M)	CO4	BL2
h)	What is GPS & GIS?	(2M)	CO4	BL2
i)	Explain the following: a) Terrestrial photogrammetry, b) Aerial triangulation	(2M)	CO5	BL3
j)	What are the basic concepts of photogrammetry surveying?	(2M)	CO5	BL2

PART–B (5X10 = 50M)

		Marks	CO	BL
2a.	Write the classifications and principles of surveying	10(M)	CO1	BL3
	(OR)			
3a.	A 30m tape standardized in the catenary as 29.990m at 100 N is used in the field with a tension of 80 N in the catenary. Calculate the sag correction if the mass of the tape is 0.33 kg per m	5(M)	CO1	BL4
b.	A 20 m chain was found to be 15 cm too long after chaining a distance of 1600 m. It was found to be 30 cm too long at the end of the day's work after chaining a total distance of 3200 m. Determine the correct distance if the chain was correct before the commencement of the work.	5(M)	CO1	BL4

4a.	What is Simpson's rule? Derive an expression for it	5(M)	CO2	BL2

b.	The following perpendicular offsets were taken at 10m intervals from a survey line to an irregular boundary line: 3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20, 5.65. Calculate the area enclosed between the survey line, the irregular boundary line and the first and last offsets by Simpson's method.	5(M)	CO2	BL2
	(OR)			
5a.	Two pegs A and B are fixed 100 m apart. A level is set up near A. Observations on a staff held at A and B gave the following readings A = 1.650, B = 1.665. The level is then placed near B and observations on a staff held at A and B gave the following; A = 1.590, B = 1.575. State whether the instrument is in adjustment or not. Also determine the correct difference in level between A and B.	5(M)	CO2	BL4
b.	State and determine the error due to curvature of the earth. Consider diameter of the Earth as 12,742 km	5(M)	CO2	BL4

6a.	Write the difference between reiteration and repetition method.	5(M)	CO3	BL3
b.	Write any two methods of traversing.	5(M)	CO3	BL3 S
	(OR)			
7a.	Explain the horizontal angle measurement by repetition method	5(M)	CO3	BL3
b.	Explain the trigonometrical levelling of heights and distancesS	5(M)	CO3	BL3

8a.	Define the term vertical curve and explain its various types with help of a neat sketch	10(M)	CO4	BL1
	(OR)			
9a.	The stadia readings with horizontal sight on a vertical staff held 50m away from a tacheometer were 1.284 and 1.780. The focal length of the object-glass was 25cm. The distance between the object-glass and turn-on axis of the tacheometer was 15cm. Calculate the stadia interval?	5(M)	CO4	BL4
b.	Two horizontal distances of 50 m and 80 m were accurately measured and the intercepts on the staff between the outer stadia wires were 0.496 and 0.796, respectively. Calculate the tachometer constants.	5(M)	CO4	BL4

10a.	Write about relief and tilt displacements	5(M)	CO5	BL3

b.	Write a note on flight planning and stereoscopy	5(M)	CO5	BL3
	(OR)			
11a.	What are the various methods employed in photographic mapping?	5(M)	CO5	BL3
b.	Explain the process of mapping by stereo plotting instruments	5(M)	CO5	BL3

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