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B. Tech Civil Engineering (Semester – 3rd)

SURVEYING

Subject Code: BCIES1-303

Paper ID: [18110713]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. How Scale of Map is decided?
- b. A 30 m chain was found to be 08cm too short throughout measurement. If the distance recorded as 200m, what is actual distance??
- c. Differentiate between Magnetic Declination and Local attraction?
- d. Write temporary adjustments done during Leveling?
- e. The line AB is 300m long and its Bearing is N 35°E, Find Latitude and Departure coordinates.
- f. Illustrate uses of Contour maps with applications
- g. What do you understand by Balancing error in Theodolite survey?
- h. Write advantages of Plane tabling
- i. For a Tacheometer fitted with anallactic lense the staff intercept reading was 0.65m with the line of sight horizontal. Calculate distance between Tacheometer and staff station.
- j. Give the relationship between degree of curve and Radius of Curve?

Section – B

(5 marks each)

Q2. State the types of surveying.

Q3. The following are the magnetic bearings of a closed traverse ABCD carried out in an area under the influence of local attraction. Find the correct magnetic bearings, if the magnetic declination for the area is 1°15'E, find also the true bearings

Line	Magnetic bearing (FB)	Magnetic bearing (BB)
AB	21°14'	202°30'
BC	138°20'	318°20'

CD	202°18'	23°23'
DA	293°41'	111°20'

- Q4. Discuss the methods of contouring.
- Q5. How a station Plotted on sheet can be fixed on ground using Two-point problem in plane Tabling.
- Q6. Write components of a curve with figure.

Section – C

(10 marks each)

- Q7. Insert the missing enters and rebook by rise and fall method. Apply usual checks.

BS	IS	FS	HI	RL	Remarks
X			279.080	277.650	OBM
	2.010			X	
	X			278.070	
3.370		0.400	X	278.680	CP
	2.980			X	
	1.410			280.640	
		X		281.370	TBM

- Q8. A tacheometer is setup at an intermediate point on a traverse course PQ. The Following observations are made on the vertically held staff.

Staff Station	Vertical Angle	Staff Intercept	Axial Hair Reading
P	+ 8°36'	2.350	2.105
Q	+ 6°6'	2.055	1.895

The Instrument is fitted with an analytic lens. Compute the length of PQ and Reduced level of Q, that of P being 321.5m.

- Q9. List out methods of setting out simple circular curves. Explain anyone method with sketch in field for a proposed highway alignment.