Code No: R1921014 **R19** SET - 1

II B. Tech I Semester Supplementary Examinations, September - 2021
SURVEYING AND GEOMETRICS
(Civil Engineering)

Time: 3 hours Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit
All Questions carry **Equal** Marks
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1 a) What is back bearing and what are the advantages of observing it in a traverse? [8M]

b) Convert the whole circle bearing into reduced bearing: 50^0, 178^0 , 220^0 , 235^0, 152^0, 78^0 , 320^0 , 245^0. [7M]

Or

2 The following reciprocal observations were made from two points P and Q: [15M]
Distance between P and Q = 11320 m
Angle of elevation of Q at P = 0’20’’
Angle of depression of Plat Q = 4’4’’
Height of signal at P = 3.84 m
Height of signal at Q = 3.75 m
Height of the instrument at P = 1.24 m
Height of the instrument at Q = 1.36 m
Determine the difference in elevations between P and Q, and the refraction correction.
Take R sin 1’’ = 30.88 m.

3 a) Explain in detail how the contour plan is used to calculate the capacity of a Reservoir. [8M]

b) Explain the principle of leveling? [7M]

Or

4 A page of level book is reproduced as shown in Table in which some readings marked as(×),are missing. Complete the page with all arithmetic checks. [15M]

Station	B.S.	I.S.	F.S.	Rise	Fall	R.L.	Remarks
1	3.150				×		
2	1.770		×		0.700	×	C.P.
3		2.200			×	×	
4	×		1.850	×		×	C.P.
5		2.440			0.010	×	
6	×		×	1.100		×	C.P.
7	1.185		2.010	×		222.200	C.P.
8		2.735		×		×	
9	×		1.685		4.420	×	C.P.
10			1.525		0.805	×	
∑	12.055		×	×			

5 a) Describe the following with respect to theodolite: [8M]
i) Centering ii) Transiting iii) Face left observations iv) Face right observations v.)Swinging vi) Telescope normal vii) Telescope inverted.

b) What is closing error? What are the checks in a closed traverse? [7M]

Or

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6	a)	What are various checks to be e performed on closed and open traverse?	[8M]
	b)	Draw a neat sketch of theodolite and describe purpose of various components? Why both Verniers are read?	[7M]
7	a)	List out the advantages and disadvantages of a total station. Explain the functions of the various parts of total station.	[8M]
	b)	What is the basic principle of GPS? Explain advantages and disadvantages.	[7M]

Or

8		Calculate the ordinates from the long chord at 7.5 m interval to set out a simple circular curve of 100. The length of the long chord is 100m.	[15M]

9	a)	Define drift in while taking aerial photographs.	[8M]
	b)	Elucidate the basic geometrical elements of a vertical aerial photograph with a neat sketch.	[7M]

Or

10		Distinguish the difference between a map and an ortho photo and describe the following terms: GCP, mosaic, Stereo pair, Fiducial marks.	[15M]

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