



	InSem Examination-IISummer2024		
	Exam Seat No.:		
	Academic Year:2023-2024	Semester:IV	
	Name of Programme: S.Y.B.Tech Civil Engineering	Pattern:2022	
	Name of Course: Surveying	Course Code: CIV222012	
	Max. Marks:30	Duration: 1 Hour	

	<p><b>Instructions:</b> Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.</p> <ol style="list-style-type: none"><li>1. This question paper contains _____page(s).</li><li>2. Answer to each new question is to be started on a new page.</li><li>3. Assume suitable data wherever required, but justify it.</li><li>4. Draw the neat labelled diagrams, wherever necessary.</li><li>5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.</li></ol>	
--	--	--

**Question No. 1 Attempt following Question**

- a) Define surveying. State the first principle of surveying? Also state the classification of surveying. (4) CO1

**OR**

- b) Distinguish between Reduced Bearing and Whole Circle Bearing. (4) CO1
- c) Explain the following terms : (4) CO1, CO2
- i) Ranging ii) True meridian, iii) Open Traverse, iv) Scale

**OR**

- d) Explain the following terms : (4) CO1, CO2
- i) Open Traverse ii) Dip, iii) Agonic Line, iv)Declination
- e) The following are the bearings taken in a closed compass traverse. (7) CO1

Line	Fore Bearing	Back Bearing
AB	45°45'	226°10'
BC	96°55'	277°05'
CD	29°45'	209°10'
DE	324°48'	144°48'

- (i) Draw a neat sketch of the traverse
- (ii) Calculate the interior angles and correct them if necessary.
- (iii) Calculate the corrected fore and back bearings of the lines

**OR**

- f) A close traverse was run along a square PQRS in counter clockwise direction. The bearing of the line PQ was observed as  $118^{\circ}30'$ . Find the bearings of the remaining lines and record them in tabular form. (7) CO1

**Question No. 2 Attempt following Question**

- a) State the various axes of dumpy level & enlist the desired relationship between them. (4) CO2

**OR**

- b) Define the following terms: i) Fore sight reading, ii) Change point, iii) Reduced level, iv) Bench mark (4) CO2
- c) Explain the temporary adjustment of the level. (4) CO2

**OR**

- d) Enlist and explain the various types of Bench Marks. (4) CO2
- e) The following consecutive staff readings were taken with a level and 4m levelling staff. (7) CO2

2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, and 2.684m. The instrument was shifted after third, sixth and eighth readings. The first reading was taken on a BM of RL 432.384 m. Enter the above readings in a page of a level book and calculate the RL of remaining points. Use collimation plane method and apply usual arithmetic check.

**OR**

- f) The following records refer to an operation involving reciprocal levelling. (7) CO2

Instrument at	Staff reading on		Remarks
	A	B	
A	1.03	1.630	Distance AB = 800.00 m
B	0.950	1.540	RL of A = 450.00 m

Find: 1) The true RL of B

- 2) The combined correction for curvature and refraction.
- 3) The collimation error, and
- 4) Whether the line of collimation is inclined upwards or downwards.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX