



R22 Regulation

Subject code:4E3AA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Regular/Supplementary Examinations, December 2024

SURVEYING
(CIVIL ENGINEERING)

Maximum Marks: 60

Date:09.12.2024

Duration: 3 hours

- Note: 1.This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A		CO	Bloom Tx																		
All the following questions carry equal marks (10X1M=10 Marks)																					
1.a)	List the different types of chains with Lengths?	1	BL1																		
b)	What is the primary object of survey?	1	BL1																		
c)	Classify the Leveling methods?	2	BL2																		
d)	Define Benchmark.	2	BL1																		
e)	What is Traversing?	3	BL1																		
f)	List out the fundamental lines of level instrument.	3	BL1																		
g)	Outline principles of tachometry.	4	BL1																		
h)	Recall necessity of curves.	4	BL1																		
i)	What is GPS?	5	BL1																		
j)	Write the principle of EDM.	5	BL1																		
Part-B		CO	Bloom Tx																		
Answer All the following questions. (5X10M=50Marks)																					
2A	The distance between 2 points P and Q measured along a slope is 250 m. Find the horizontal distance between PandQ if i) Angle of slope is 10 degrees ii) slope is 1 in 4.50 iii) difference in elevation is 35 meters. [5M]	1	BL2																		
2B	Demonstrate the different methods of setting out a right angle at a point on a chain line using a chain/tape only. [5M]	1	BL2																		
OR																					
3	The following bearings were observed in a closed traverse. Find the included angles and correct the bearings of the lines. [10M]	1	BL3																		
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4A	Discuss briefly about the various methods of Leveling. [5M]	2	BL4																		
4B	Define contour? What are the various methods of contour interpolation? [5M]	2	BL1																		

		OR																					
5	The following offsets were taken from a survey line to a curved boundary line: [10M]	2	BL2																				
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Find the area between the survey line, the curved boundary line and the first, last offsets by Trapezoidal rule																							
6A	Explain various parts of a theodolite. [5M]	3	BL2																				
6B	What are the various methods of Theodolite traversing [5M]	3	BL1																				
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7A	In a closed traverse PQRSP, the length of a line RS cannot be observed directly and the following are the lengths and bearings of the lines observed from stations P and Q. <table border="1"> <thead> <tr> <th>Line</th> <th>Lengths'(m)</th> <th>Bearing</th> </tr> </thead> <tbody> <tr> <td>PQ</td> <td>150</td> <td>95°30'</td> </tr> <tr> <td>QR</td> <td>210</td> <td>10°42'</td> </tr> <tr> <td>PS</td> <td>180</td> <td>6°12'</td> </tr> </tbody> </table> Calculate the length and bearing of RS. [5M]	Line	Lengths'(m)	Bearing	PQ	150	95°30'	QR	210	10°42'	PS	180	6°12'	3	BL3								
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PQ	150	95°30'																					
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7B	Explain how you would measure with a Theodolite a) Horizontal angle by repetition method b) Vertical angle [5M]	3	BL2																				
8	How a curve is designed and state different methods of setting out a simple curve [10M]	4	BL2																				
		OR																					
9A	A leveling staff is held vertical at a distance of 100 m, 300m from the axis of tachometer and the staff intercept for horizontal sights are 0.99 and 3.10 m .Find the constants of the instrument. The instrument setup at a station A staff held vertical at a point B ,depression is 10 degrees readings on staff are 2.670,1.835,1.000m.calculate RL of B and its horizontal distance from A .HI is 1.42 m and RL of station A is 450.50 [5M]	4	BL3																				
9B	List out the different types of curves along with neat sketches of each [5M]	4	BL2																				
10A	Classify the different functions of Total station [5M]	5	BL2																				
10B	What do you understand by GPS? Give an overview of it. [5M]	5	BL1																				
		OR																					
11	Explain about the principle of working of an EDM instrument? [10M]	5	BL2																				