R22 Regulation *Subject code: 4E3AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2024

SURVEYING

(CE)

Maximum Marks: 60 Date:25.07.2024 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)	Define principles of Surveying.	CO1	BL1
b)	What is meant by Micrometer microscope	CO1	BL1
c)	Classify Benchmark and Reduced level	CO2	BL2
d)	Explain regular and irregular boundary	CO2	BL2
e)	Identify types of theodolites methods	CO3	BL3
f)	Compare different types of tachometric surveys	CO3	BL4
g)	Explain principle of tachometry	CO4	BL5
h)	When we are using reverse curves	CO4	BL1
i)	List two advantages of GPS	CO5	BL2
j)	What are the various components of EDM instrument	CO5	BL1
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
2	A. How to find out effect of curvature of Earth and Refraction. [5]	CO1	BL1
	B. Explain the methods of direct and Indirect ranging. [5]	CO1	BL4
	OR		
3	A. Explain the function of Surveyor's compass. [5]	CO1	BL4
	B. List out the different methods of distance measurements. [5]	CO1	BL4
4	The lengths and bearings of the four lines of a closed traverse ABCDE. Determine the length and bearing of the fifth line EA. [10]	CO2	BL4

Line	Length	Bearing
AB	194.1 m	85^0
BC	201.2 m	15^0
CD	165.4 m	$285^0\ 30'$
DE	172.6 m	$195^0 30'$
EA	?	?

	OR		
5	A. Explain the various methods for computation of areas along irregular boundaries. [5]	CO2	BL2

	B. The following readings were taken with dumpy level 8,21,6.92,6.12,8.42,9.81,6.63,7.9 1,8.26,9.71,10.21.The level was shifted after 5th,7 th,9th readings reduced level at first point was 200.00.Rule out a page of your level field book by height of instrument method and apply usual checks. [5]	CO2	BL3
6	A tacheometer was setup at a station C and the following readings were obtained on a staff vertically held. Calculate the horizontal distance CD and R.L of D. Where, K=100, C=0. [10] Inst. Station: C, D; Staff Station: BM; Vertical Angle: - 5°20', + 8°12'; Hair Readings (m): 1.150, 1.800, 2.450 / 0.750, 1.500, 2.250; Remarks: R.L of B.M = 760.500m	CO3	BL5
	OR		
7	A.A theodolite was set up at a distance of 180m from a light house and the angle of elevation to its top and depression to its base were observed as $22^0 45'$ and $1^0 12'$ respectively. The reading on a staff held on B.M. of R.L. 175.590m was 1.85m withline of collimation horizontal. Calculate The height of light house. [5]	CO3	BL3
	B. Compare trigonometrical leveling base is inaccessible and accessible. [5]	CO3	BL5
8	A.A Simple circular curve is to have a radius of 570m. The tangents intersect at chain age 1080 m and the angle of intersection is 140. Find: a) Tangent distance b) Chain age at beginning and end c) Length of long chord [5]	CO4	BL3
	B. What are the different omitted measurements. [5]	CO4	BL1
	OR		
9	A. Two straights AB and BC intersect at a chain age of 4242.0 m. The angle of intersection is 140°. It is required to set out a 5° simple circular curve to connect the straights. Calculate all the data necessary to set out the curve by the method of offsets from the chord produced with an interval of 15 m. [5]	CO4	BL3
	B. Discuss about necessity of curves in civil engineering projects with practical applications. [5]	CO4	BL4
10	A. Explain the working principle of EDM and list the salient features of EDM. [5]	CO5	BL2
	B.Mention the reasons for the Space segment and control segment. [5]	CO5	BL5
	OR		
11	A. Explain the basic principles of GPS and its application in surveying. [5]	CO5	BL2
	B. Evaluate satellite orbits with GPS observations. [5]	CO5	BL5