



R22 Regulation

Subject code: 4E3AA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Regular Examinations, February 2024

SURVEYING

(Civil Engineering)

Date: 23.02.2024 Duration: 3 hours

Maximum Marks: 60

- 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 Surveying.	CO1	BL1
b)	What is meant by triangulation	CO1	BL1
c)	Distinguish backsight & fore sight	CO2	BL2
d)	Explain contouring	CO2	BL2
e)	Mention types of theodolites	CO3	BL2
f)	Compare different types of traversing	CO3	BL2
g)	Explain principle of tachometry	CO4	BL1
h)	Write the reasons for using compound curves	CO4	BL1
i)	List two advantages of Totalstation.	CO5	BL2
j)	What are the various types of EDM instrument	CO5	BL1
Part-B			Bloom Tx level
Answer All the following questions. (5X10M=50Marks)			
2	A. Differentiate between Prismatic compass and Surveyor's compass. [5M]	CO1	BL4
	B. What do you understand by closing error? Show how it can be adjusted by graphical method. [5M]	CO1	BL1
OR			
3	A. Explain the principle on which chain survey is based. [5M]	CO1	BL2
	B. Convert the whole circle bearing into reduced bearing: 50° , 176° , 210° , 232° , 150° , 76° , 310° , 242° . [5M]	CO1	BL3
4	A. Discuss the characteristics of contour lines. [5M]	CO2	BL3
	B. Following consecutive staff readings were taken with a level along a sloping ground line AB at a regular distance of 20m by using 4m leveling staff 0.352, 0.787, 1.832, 2.956, 3.758, 0.953, 1.766, 2.738, 3.872, 0.812, 2.325 and 3.137. Rule out a page of level field book, enter the above readings. RL of points A is 320.288m. Calculate RL of all the points by rise and fall method line AB. [5M]	CO2	BL3
OR			
5	A. Explain the various methods for computation of areas along irregular	CO2	BL2

	boundaries. [5M]		
	B. The following readings were taken with dumpy level 6.21, 4.92, 6.12, 8.42, 9.81, 6.63, 7.91, 8.26, 9.71, 10.21. The level was shifted after 4 th , 6 th , 9 th readings reduced level at first point was 100.00. Rule out a page of your level field book by height of instrument method and apply usual checks. [5M]	CO2	BL3
6	A. 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, $K=100$, $C=0$. [5M] Inst. Staff Vertical Station Station Angle Hair Readings (m) Remarks C BM - 5°20' 1.150, 1.800, 2.450 R.L of B.M D + 8°12' 0.750, 1.500, 2.250 = 750.500m	CO3	BL3
	B. List out the the permanent adjustments in theodolite. [5M]	CO3	BL4
	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°45' and 1°12' respectively. The reading on a staff held on B.M. of R.L. 175.590m was 1.85m with line of collimation horizontal. Calculate a) The height of light house [5M]	CO3	BL3
	B. Compare stadia and tangential methods of tachometry. [5M]	CO3	BL3
8	A. A Simple circular curve is to have a radius of 573m. The tangents intersect at chain age 1060 m and the angle of intersection is 120°. Find: a) Tangent distance b) Chainage at beginning and end c) Length of long chord. [5M]	CO4	BL3
	B. What are the different methods of traversing. [5M]	CO4	BL2
	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 30 m. [5M]	CO4	BL3
	B. Discuss about traverse computations and adjustments. [5M]	CO4	BL3
10	A. Explain the working principle of Total station and list the salient features of Total Station. [5M]	CO5	BL2
	B. Mention the reasons for the overlap of the photographs. [5M]		
	OR		
11	Explain the basic principles of GPS and its application in surveying. [10M]	CO5	BL2