



R20 Regulation *Subject code: 3P3AC*
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech III Semester Regular/Supplementary Examinations, March/April 2023
SURVEYING & GEOMATICS
(CIVIL ENGINEERING)

Maximum Marks: 70

Date: 01.04.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 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

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Write the two basic principles of surveying?
- 2 Give the conventional signs used to represent the following surface features on a survey map.
- 3 Differentiate between open and closed traverse.
- 4 What do you understand by horizontal equivalent in contouring?
- 5 Define Reiteration method. †
- 6 Write the methods of traversing?
- 7 Write the types of curves?
- 8 What is Tachometry?
- 9 Write the applications of GPS?
- 10 Write the components of GPS?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 A chain line AB crosses a river, C and D being on the near and distant banks, respectively. A point O at right angle to AB from C is fixed at 50 m and at O the bearings of D and A are taken so that the included angle DOA is 90°. AC is then measured as 30 m. find the width of the river. 10M
- OR
- 12 Differentiate between surveyors compass and prismatic compass. What types of adjustments are made in these compasses? 10M
 - 13 What are the characteristics of contours? Explain clearly with diagrams. 10M
- OR
- 14 From the following data calculate the height of the chhajja from the floor level: RL of the floor -100.000, staff reading on the floor - 3.125. staff reading at the bottom of the chhajja with the staff held inverted is 1.875. 10M
 - 15 Why is balancing of back sight and foresight necessary? Explain with a neat sketch. To find the RL of station B, two observations are taken by a theodolite from station A one to a BM and the other to the station B. The record are as follows: Find the RL of B and the distance between the BM and station. 10M

Inst. St	Staff St.	Target	Vertical angle	Staff reading	Remarks
A	BM	Lower	$-10^{\circ} 0'$	0.655	RL of BM is 510.500m
A	BM	Upper	$-7^{\circ} 0'$	2.655	
A	B	Lower	$-5^{\circ} 0'$	1.250	
A	B	Upper	$+4^{\circ} 0'$	3.200	

OR

- 16 The elevations of two proposed triangulation stations A and B, are 140m and 416m above MSL, resp. The elevation of an intervening peak at C, 60km from A, which is likely to obstruct the line of sight, is 150m: Ascertain if A and B are intervisible, and if not, find the height required, for the scaffold at B so that the line of sight clears C by 3 m. 10M
- 17 Distinguish between Stadia and Tangential methods of Tacheometry? 10M
- OR
- 18 How are curves classified? Explain the following terms in connection with curves (a) Vertex (b) Arc length (c) Long chord of the curve (d) Summit 10M
- 19 Explain the Electromagnetic wave theory with neat sketch. 10M
- OR
- 20 Explain the classification of Total Station? 10M