



Regulation R20

Subject Code: 3P3AC

**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**

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

**B.Tech III Semester Supplementary Examinations, July 2022**

**SURVEYING AND GEOMATICS**

(Civil Engineering)

Maximum Marks: 70

Date:23.07.2022 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 10 questions. Answer any 5 questions which carries 10 M.
  4. Each question carries 10marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M = 20 Marks)

1. Define conditioned triangles.?
2. What is plumb Bob, with neat sketch?
3. Define Local Attraction?
4. Define Level Line?
5. Name the Sources of errors in theodolite?
6. What is a change point?
7. Write the formula for refraction correction?
8. Define theodolite traversing?
9. Define simple curve?
10. What is Total Station?

Part-B

Answer all the questions.

(10M X 5 = 50Marks)

11. a) Explain the use and working of line ranger. [ 5M ]  
b) Find the maximum length of offset so that displacement of the point on the paper from both sources of error should not exceed 0.25 mm, given that the offset is measured with an accuracy of 1 in 50 and scale is 1 cm = 8 m. [5M]

OR

12. What are the obstacles in chain surveying? Explain them with neat sketches? [10M ]

13. a) What is leveling and [5M]  
 b) explain different methods of leveling. [5M]

OR

14. The following observation were made for a closed traverse around an obstacle . Due to obstructions, the lengths of line DE and EA could not be measured . Find out the missing lengths. [10M ]

Line	Length (m)	Bearing
AB	500	98°30'
BC	620	30°20'
CD	468	298°30'
DE	?	230°00'
EA	?	150° 10'

15. A level was set up at a point C at a distance of 100m from A and 1000m from B. The staff reading on the staff kept at A was 0.445m and that on the staff held at B was 2.845. Find the true difference in elevations of A and B. [10M ]

OR

16. A leveling staff is held vertical sight distance of 100m and 300m from the axis of a tachometer and the staff intercepts for horizontal sights are 0.99m and 3.00 m, respectively. Find the constants of the instruments. The instrument is set up at a station A and the staff is held vertical at a point B. With the telescope inclined at an angle of depression of 10° to the horizontal, the readings on the staff are 2.670, 1.835, 1.000 m. Calculate the RL of B and its horizontal distance from A. The HI Is 1.42 m and RL is 450.5m. [10M ]

- 17 a) Derive relation between Degree and Radius of curve? [ 5M ]  
 b) What is Compound Curve and draw the sketches? [5M]

OR

18. Explain different types of EDM instruments? [10M ]  
 19. Discuss various applications of GPS.? [ 10M ]

OR

- 20 Explain about the electromagnetic wave theory? [10M]