R17 Regulation *Subject code: 1P3AE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech II Year I Semester Supplementary Examinations, March/April 2023

SURVEYING

(Civil Engineering)

Maximum Marks: 70 Date:10.04.2023 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 Differentiate between plane and geodetic surveying.
2 Write principles of Surveying.
3 Convert the whole circle bearing into reduced bearing: 50o, 176o, 210o, 232o, 150o, 760, 310o, 2420.
4 Define and distinguish between magnetic dip and magnetic declination.
5 What are the methods used to balancing the traverse?
6 Distinguish between closed traverse and open traverse.
7 Write the tangential method of tacheometry.
8 What are the methods used for setting curves?
9 Define the GPS.
10 What are components of GPS?

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Define true meridian, local attraction, magnetic declination, dip of needle and differentiate between Quadrantel bearing and whole circle bearing. [10]

OR

12 The following bearings were observed in running a closed traverse

line	FB	BB
AB	75°5'	254°20'
BC	115°20'	296°35'
CD	165°35'	345°35'
DE	224°50'	44°5'
EA	304°50'	125°5'

At what station do you suspect local attraction? Determine the correct magnetic bearings. If declination was $5^0 10'$E, what are the true bearings? [10]

13 The following consecutive readings were taken with a level and 5m leveling staff on continuously slopping ground at a common interval of 20m: 0.385;1.030;1.925;2.825;3.730;4.685;0.625;2.005;3.110;4.485. the reduced level of the first point was 208.125m. calculate the reduced level of the point either by rise and fall method or height of Instrument method. [10]

OR

14 a) What is bench mark? Explain different types of bench marks. [5]
b) What is Simpson's. What are its limitations. [5]

15 The following observations were made for a closed traverse roung an obstacle. Due to obstructions, the lengths of lines DE and EA could not be measured. Find out the missing lengths. [10]

Line	Length(m)	bearing
AB	500	$98^{O}30'$
BC	620	$30^{O}20'$
CD	468	$298^{O}30'$
DE	?	$230^{O}00'$
EA	?	$150^{O}10'$

OR

16 Briefly explain about the measurement of horizontal angle by reiteration method and repetition Method. [10]

17 a) Explain different systems of tacheometric measurements. [5]
b) What are different types of curves and explain. [5]

OR

18 a) Derive relation between Degree and Radius of curve. [5]
b) What is Compound Curve. [5]

19 What is total station? What is the important operation of total station and write the advantages of Total station? [10]

OR

20 What is Electromagnetic wave theory? Explain Electromagnetic distance measuring system. [10]