

Code: CE3T5

**II B.Tech - I Semester–Regular/Supplementary Examinations
November 2016**

**SURVEYING
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) What is fundamental difference between plane surveying and geodetic surveying?
- b) What do you mean by triangulation?
- c) When is the chain survey recommended?
- d) Describe GTS bench marks and permanent bench marks.
- e) What is difference between a level surface and a horizontal surface?
- f) State Simpson's rule. What are the considerations and limitations of this rule?
- g) What are the functions of a theodolite?
- h) What are the multiple and additive constants of a theodolite?
- i) What are the different types of horizontal curves?
- j) State the possible sources of errors in leveling?
- k) What do you understand by remote sensing?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2.

a) List out and explain various types of Tape Correction.

6 M

b) The length of a Survey line was measured with a 20m chain and was found to be equal to 1200m. As a check the length was again measured with a 25m chain and was found to be 1212m. On comparing the 20m chain with the test gauge, it was found to be 1 decimeter too long. Find the actual length of the 25m chain used. 10 M

3.

a) The reduced bearings of the lines of a traverse are given below. Find the whole circle bearings of lines. 8 M

Line	Bearings
AB	N 60° 25' E
BC	S 85° 30' E
CD	S 25° 45' W
DE	S 64° 30' E
EF	N 82° 45' W
FA	N 28° 14' W

b) The following staff readings were observed successively with a level, the instrument having been moved after 3rd,

6th and 8th readings: 2.228, 1.606, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, and 2.684 (m). Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of R.L. 432.384m. Use rise and fall method. 8 M

4. The following perpendicular offsets were taken from a chain line to a hedge

Chainage (m)	0	15	30	45	60	70	80	100	120	140
Offsets (m)	7.6	8.5	10.7	12.8	10.6	9.5	8.3	7.9	6.4	4.4

Calculate the area between the survey line, the hedge and the end offsets

i) Trapezoidal rule. ii) Simpson's rule 16 M

5.

a) What is the tangential method of tachometry? What are its advantages and disadvantages over the stadia method? 6 M

b) A Tacheometer was set up at a station A and the readings on a vertically held staff at B were 2.255, 2.605 and 2.955, the line of sight being at an inclination of $+8^{\circ}24'$. Another observation on the vertically held staff at B.M. gave the Readings 1.640, 1.920 and 2.200, the inclination of the line of sight being $+1^{\circ}6'$. Calculate the horizontal distance between A and B, and the elevation

of B if the R.L of B.M is 418.685 m. the constants of the instruments were 100 and 0.3 10 M

6.

a) Why are the curves provided? Explain different types of curves with neat sketches. 8 M

b) Discuss in detail the advantages of the following over traditional method of

Surveying: i) Total Station (ii) Global positioning system.

8 M