

Code: CE3T5

**II B.Tech-I Semester–Regular Examinations–December 2015**

**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) Define plan and map.
- b) Draw the conventional signs of
  - i) triangulation station
  - ii) traverse station.
- c) Define bearing and declination.
- d) What is difference between temporary and permanent adjustments of leveling?
- e) Draw the contours of hill and pond.
- f) State trapezoidal rule and average ordinate rule for measurement of areas.
- g) Define
  - i) transiting
  - ii) face left.
- h) What are the principles of Tacheometry and Trigonometrical Leveling?
- i) Define back tangent and point of curve.
- j) What are the various cross-sections of ground surface and write the formula to calculate respective areas.
- k) What is total station? Write any one application of total station in surveying.

## PART – B

Answer any **THREE** questions. All questions carry equal marks. 3 x 16 = 48 M

2 a) Which points we should kept in mind while selecting survey stations? What are the errors generally occur in chain survey? 8 M

b) A big pond obstructs the chain AB. A Line AL was measured on the left of line AB for circumventing the obstacle. The length AL was 901m. Similarly another line AM was measured on the right of line AB whose length was 1000m. Lengths of lines BL and BM are 502m and 548m respectively. Find the distance AB. 8 M

3 a) What are the uses of contour maps? What is contour line? 8 M

b) During fly leveling the following note is made. B.S are 0.62, 2.05, 1.42, 2.63 and 2.42m, and F.S are 2.44, 1.35, 0.53 and 2.41m. The first B.S was taken on a B.M R.L of 100m from the last B.S; it is required to set 4 pegs each at distance of 30m on a rising gradient of 1 in 50. Calculate R.L of the top of each peg. 8 M

4 a) The following offsets were taken from a chain line to a hedge:

Distance (m)	0	20	40	60	80	120	160	200	240	270	300
Off sets (m)	24	20	16	12	8	10	14	16	20	22	26

Calculate the area enclosed by the chain line, the hedge and the end offsets by Simpson's rule and trapezoidal rule.

8 M

b) Write a short note on the following

8 M

i) measurement of volumes from spot levels.

ii) Calculation of capacity of reservoir.

5 a) Explain how you would measure horizontal angle by reiteration with theodolite.

8 M

b) Derive elevation and distance formula by tangential method for following cases.

8 M

i) Both angles of elevation

ii) Both angles of depression

iii) One angle of elevation and one angle of depression.

- 6 a) Set a simple right handed circular curve for following data.  
Chainage of vertex is 4000m, Radius of curve is 150m,  
Deflection angle is 400, Peg interval is 20m. 8 M
- b) What is geodetic surveying? Explain in detail. Write any  
three differences between plane surveying and geodetic  
surveying. 8 M