Roll No. ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.–3)
SURVEYING
Subject Code : BTCE-304
Paper ID : [A1116]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

1. **Write briefly :**

   (a) What are the two basic principles of surveying?

   (b) What are the factors on which precision of survey-depends?

   (c) Give the conventional signs used to represent the following surface features on a survey map :

   (i) Canal

   (ii) Unmetalled road

   (d) What is a well conditioned triangle?

   (e) What is meant by 'Tie line'?

   (f) Differentiate between open and closed traverse.

   (g) What is meant by true bearing of a line?

   (h) What is meant by orientation of the table in plane table surveying?

   (i) Define Bench mark. How is it established?

   (j) What do you understand by horizontal equivalent in contouring?

SECTION-B

2. 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.

3. Explain the Bowditch and transit rule for adjustment of closing error in theodolite surveying.

4. The following are the bearings observed in a closed compass traverse. Find the stations affected by local attraction and compute the correct bearings of the lines

Line	FB	BB
AB	32° 30'	214° 30'
BC	124° 30'	303° 15'
CD	181° 00'	l° 00'
DA	289° 30'	108° 45'

5. 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.

6. What is tangential tacheometry? Explain its general theory?

SECTION-C

7. a) What are the different methods of locating contours? Describe merits and demerits of each.

   b) What are the characteristics of contours? Explain clearly with diagrams.

8. Explain the Three Point Problem giving details of different types of solutions to the problem. When does the theory to solve the problem fail?

9. 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