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

**Total No. of Questions : 09**

**B.Tech.(CE) (2011 Onwards)   (Sem.–3)**
# SURVEYING
**Subject Code : BTCE-304**
**M.Code : 56075**

**Time : 3 Hrs.**                                                   **Max. Marks : 60**

**INSTRUCTION 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 have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

## SECTION-A

1. **Answer briefly :**

   a) Explain the topographical map.

   b) What are the different tallies used in a Metric chain?

   c) What do you mean by reduced bearing?

   d) What do you mean by Transiting in Theodolite Surveying?

   e) What is changing face in Theodolite Surveying? What are the different steps involved in it?

   f) Describe Versed Sine.

   g) Explain Principle of Surveying with valid reasons.

   h) Can Contours cut each other at any point? Write your answer with reasons.

   i) What do you mean by Back Sight Orientation?

   j) Explain basic principle of Triangulation.

## SECTION-B

2. Explain Levelling with the three Screw Levelling head.

3. A 30m chain used to measure the length of a line was tested before the line was measured and was found to be 29.95m long. The line was measured and the length was recorded as 590.48m. The chain was tested again and was found to be 30.08m long. Find the true length of the line.

4. Draw a curve and describe minimum 10 elements in it.

5. What are the various corrections that can be applied in Base Line measurement?

6. What do you mean by Designation of Curve? Explain its various different methods.

## SECTION-C

7. A tacheometer was set up at station P and observations were made to a staff held normal to the line of sight over point Q. The vertical angle measured was 6°36'. The three hair readings were 1.905, 2.480 and 3.055. The reading from P, with the line of sight horizontal to a BM of RL 852.55 was 1.855. If the instrument constants are 100 and 0.5, find the RL of Q.

8. a) Explain direct methods of locating contours.

   b) Describe various methods of interpolating the contours.

9. a) The following bearings were observed with a compass. Calculate the interior angles :

   | Line | Fore Bearing |
   |------|--------------|
   | AB   | 60°30'       |
   | BC   | 122°3'       |
   | CD   | 46°0'        |
   | DE   | 205°30'      |
   | EA   | 300°0'       |

   b) Explain various methods to eliminate the effects of local attraction.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**