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Total No. of Questions: 09

Total No. of Pages: 02

**B. Tech.(CE) (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 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.

- a) Why is it important to 'work from the whole to part and never from part to whole' in surveying?
- b) List the classification of survey based on the purpose of survey.
- c) Give the conventional signs used to represent the following surface features on a survey map (i) Canal (ii) Temple
- d) Examine whether the triangle having sides 60 m, 40 m and 30 m is well conditioned or not
- e) What is meant by 'Tie line'?
- t) 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. Explain 'Chaining by steps' in moving downhill.
3. 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' | 1° 00'    |
| DA   | 289° 30' | 108° 45 ' |
4. What is meant by closing error in a traverse? Explain the methods of adjusting closing errors in a theodolite traversing
5. Explain the theory to solve three point problems.
6. The following readings are successively taken from an instrument in a leveling work: 0.224, 0.354, 0.565, 1.765, 1.890, 2.400, 1.765, 0.330, 0.875, 1.245. The position of the instrument was changed after taking the 3rd and 6th readings. Draw out the level field book. If the RL of the first point was 100.00, calculate the RL of all other points using rise and fall method. Apply the check.

**SECTION C**

7. Explain the terms with reference to contouring: (i) contour interval (ii) contour gradient (iii) interpolation of contour (iv) horizontal equivalent
8. a) Discuss the different systems of tachometric measurements.  
b) How would you determine tachometric constants?
9. How are curves classified? Explain the following terms in connection with curves  
(i) Vertex (ii) arc length (iii) long chord of the curve (iv) summit