Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE- SEMESTER– 1st / 2nd (OLD SYLLABUS) EXAMINATION – SUMMER 2015**

**Subject Code: 110004 Date: 12/06/2015**

**Subject Name: Elements of Civil Engineering**

**Time: 10.30am-01.00pm Total Marks: 70**

**Instructions:**

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

**Q.1** **(a)** Define surveying. Give the classification of surveying. **07**

**(b)** Explain different instruments used for linear measurement. **07**

**Q.2** **(a)** Differentiate between prismatic and surveyor's compass. **07**

**(b)** What is construction management? Explain the importance of planning and scheduling in construction project. **07**

**Q.3** **(a)** Define: 1. Magnetic bearing, 2. Leveling, 3. Back sight, 4. Hydrologic cycle, 5. Declination, 6. Contour, 7. Traverse. **07**

**(b)** Following readings were taken on a continuously sloping ground with a 4 m staff and a dumpy level: **07**

0.575, 0.980, 1.750, 2.560, 3.880, 0.230, 1.250, 2.345, 3.340, 0.660, 2.340, 2.890.

Find RL of all the points. Assume suitable bench mark.

**Q.4** **(a)** Explain in brief different types of cement. **07**

**(b)** Find out the included angles of the traverse ABCDA using the following bearings. Also show the necessary checks. **07**

| Line | FB | BB |
|---|---|---|
| AB | 122˚15' | 302˚15' |
| BC | 66˚00' | 243˚45' |
| CD | 308˚15' | 133˚00' |
| DA | 198˚00' | 15˚30' |

**Q.5** **(a)** Differentiate between load bearing structure and framed structure. **07**

**(b)** Explain different surface water sources. **07**

**Q.6** **(a)** Explain the role of transportation in national development. **07**

**(b)** Write a short note on watershed development. **07**

**Q.7** **(a)** Distance between two stations was measured with a 20 m chain and found to be 600 m. The same distance was measured with a 30 m chain and found to be 597.60m. If the 20 m chain was 5.0 cm too short, what was the error in the 30.0m chain? **07**

**(b)** Explain the working of a planimeter with a neat sketch. **07**

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