

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> • EXAMINATION – SUMMER 2013**

**Subject Code: 110004**

**Date: 18-06-2013**

**Subject Name: Elements of Civil Engineering**

**Time: 02:30 pm – 05:00 pm**

**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) Explain the fundamental principles of surveying **07**  
(b) The distance between two points on the ground was measured with 30 m chain and found to be 1500 m. The same distance was measured with a 20 m chain and found to be 1450 m. If the 30 m chain was 5 cm too short, what was the error in the 20 m chain? **07**
- Q.2** (a) The following staff readings were taken on a uneven ground with a 4 m leveling staff. Calculate reduced levels of all the points by Height of instrument method and apply usual checks. The instrument was shifted after 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> readings. The first reading was taken on a bench mark of 100 m.  
1.20 , 2.65, 3.50, 2.40, 1.95, 0.90, 1.80, 3.70, 2.50, 0.85, 1.70 **07**  
(b) Define: 1) Bench mark .2) Height of Instrument. 3) Magnetic declination. 4) Reduced level 5) Magnetic meridian. **07**
- Q.3** (a) How will you calculate the area having irregular boundary with the help of a planimeter? **07**  
(b) How will you calculate capacity of a reservoir? **07**
- Q.4** (a) Discuss the requirements of good quality bricks. **07**  
(b) Explain the different types of paints used in civil engineering. **07**
- Q.5** (a) Explain general principles of building planning **07**  
(b) Discuss various construction materials used in civil engineering **07**
- Q.6** (a) With the neat sketch explain hydrological cycle. **07**  
(b) What are the various modes of transportation? Discuss them **07**
- Q.7** (a) Write short note on Traffic control devices. **07**  
(b) Discuss the methods to control the flood. **07**

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