

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- 1st / 2nd • EXAMINATION – WINTER 2013

Subject Code: 110004

Date: 30-12-2013

Subject Name: Elements of Civil Engineering

Time: 10:30 am – 01:00 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) Following staff readings were taken on an uneven ground with a 4 m leveling staff. Calculate reduced levels of the points by height of instrument method and apply usual checks. The instrument was shifted after 3rd, 6th and 9th 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 **14**
- (b) Discuss the characteristics of contour with suitable sketches
- Q.2** (a) Following bearings were observed in a closed traverse, determine the included angles. **14**
- | Line | F.B. | B.B. |
|------|------|------|
| AB | 70 | 250 |
| BC | 110 | 290 |
| CD | 160 | 340 |
| DE | 230 | 40 |
| EA | 300 | 20 |
- (b) Explain the fundamental principles of surveying.
- Q.3** (a) The distance between two points on the ground was measured with a 20 m chain and was found to be 1800 m. The same distance was measured with a 30 m chain and found to be 1740 m. If the 20 m chain was 5 cm too short, what was the error in the 30 m chain? **14**
- (b) How will you calculate the area having irregular boundary with the help of a planimeter?
- Q.4** (a) Discuss the types of loads acting on th building **14**
- (b) Explain the common Building components and their functions.
- Q.5** (a) Discuss the requirements of good quality bricks. **14**
- (b) Discuss the various construction materials used in Civil Engineering
- Q. 6** (a) Write short note on traffic control devices **14**
- (b) With the neat sketch explain hydrological cycle.
- Q.7** a) Discuss the methods to control the flood. **14**
- (b) What are the various modes of transportation? Discuss them.
