

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- 1<sup>st</sup> / 2<sup>nd</sup> • EXAMINATION – SUMMER • 2014**

**Subject Code: 110004****Date: 24-06-2014****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) Define surveying. Explain the principles of surveying **07**  
 (b) Explain the role of Civil Engineering in infrastructural development **07**
- Q.2** (a) Differentiate between : **07**  
 1. Direct and Indirect ranging  
 2. Trapezoidal rule and Simpson's rule for finding area and volume  
 (b) Define 1. Magnetic bearing 2. Bench mark 3. Foresight 4. Traverse 5. Change point **07**  
 6. Leveling 7. Reduced level
- Q.3** (a) Explain different characteristics of the contours **07**  
 (b) The following bearings are observed while traversing with a compass and tape. Find **07**  
 out the included angles for the traverse.

Line	FB	BB
AB	188°45'	7°45'
BC	118°15'	298°15'
CD	346°35'	166°30'
DE	337°05'	158°10'
EA	293°30'	113°00'

- Q.4** (a) Following readings were taken on a continuously sloping ground with a dumpy level **07**  
 and a four meter staff:  
 0.560, 0.980, 1.250, 1.980, 2.350, 3.560, 0.780, 1.670, 2.750, 3.880, 0.900, 1.350,  
 2.100. Find RL of all the points and show necessary checks  
 (b) Enlist different principles of planning and explain any three in detail. **07**
- Q.5** (a) What is building foundation? Why it is required? Give classification of the **07**  
 foundation.  
 (b) Explain the different components of Geographic Information System. **07**
- Q.6** (a) What is the difference between mortar and concrete? Explain different types of **07**  
 mortar and concrete.  
 (b) Explain different sources of the water. **07**
- Q.7** (a) Write a short note on different ways of transportation **07**  
 (b) Explain with neat sketch different components of the stair. **07**

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