

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-I & II(NEW) EXAMINATION – WINTER 2022**

Subject Code:3110004

Date:09-03-2023

Subject Name:Basic Civil Engineering

Time:10:30 AM TO 01:00 PM

Total Marks:70

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Discuss Branches of Civil Engineering. **03**  
 (b) Enlist principles of planning and describe any one in detail. **04**  
 (c) Enlist different types of foundation and explain Open footing. **07**
- Q.2** (a) Give necessity of town planning. **03**  
 (b) Differentiate between plane survey and geodetic survey. **04**  
 (c) Enlist various building services and objectives of building services **07**
- OR**
- (c) Draw a detailed sketch of a cross section of a wall showing the components of the building. **07**
- Q.3** (a) Enlist various instruments used in linear measurement. **03**  
 (b) What is whole circle bearing and quadrantal bearing? **04**  
 (c) The following consecutive readings were taken with a dumpy level and 4 m leveling staff on continuous sloping ground at 30 m intervals. 0.680, 1.455, 1.855, 2.330, 2.885, 3.380, 1.055, 1.860, 2.265, 3.540, 0.835, 0.945, 1.530 and 2.250. The RL of starting point was 80.750 m. Rule out page of a level book and enters the above readings. Find RL of other points by Rise and Fall method and apply necessary checks. Also determine gradient of a line joining first and last point. **07**
- OR**
- Q.3** (a) Give difference between Surveyors and prismatic compass. **03**  
 (b) Draw sketch of Dumpy level and show all parts **04**  
 (c) Explain various aids and devices used to control and regulate traffic. **07**
- Q.4** (a) Draw sketch of RCC beam. **03**  
 (b) Explain physical and chemical properties of cement. **04**  
 (c) Describes characteristics of contour in brief. **07**
- OR**
- Q.4** (a) Draw traffic signals for (i) speed limit (ii) No parking. **03**  
 (b) Write short note on FSI. **04**  
 (c) Enlist different bonds of Brick and Describe English bond in detail. **07**
- Q.5** (a) Explain smart city and its features. **03**  
 (b) Write a short note on rain water harvesting systems. **04**  
 (c) Describe mass transportation systems. **07**
- OR**
- Q.5** (a) Explain solid waste management system in brief. **03**  
 (b) Explain Energy efficient Building. **04**  
 (c) Write short note on BRTS. **07**

\*\*\*\*\*