

Enrollment No./Seat No.:

# GUJARAT TECHNOLOGICAL UNIVERSITY

**Bachelor of Engineering - SEMESTER - 1/2 EXAMINATION - WINTER 2025**

**Subject Code: BE01000101/BE01R00101**

Date: 30-12-2025

## **Subject Name: Basic Civil Engineering**

**Time: 02:30 PM TO 05:00 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.

|  | Marks |
|--|-------|
| <b>Q.1</b> (a) List different types of building materials used in construction and state their applications. | 03    |
| (b) Explain the properties of cement and aggregates as building materials.                                   | 04    |
| (c) Discuss classification of buildings based on structure.  | 07    |
| <b>Q.2</b> (a) Differentiate between English bond and Flemish bond.  | 03    |
| (b) Enlist and explain any two principles of planning of buildings.  | 04    |
| (c) Explain the concepts of low-cost housing and building automation with examples.                          | 07    |

OR

(c) Describe the various principles of zoning. 07

**Q.3** (a) List the quality characteristics of drinking water. 03

(b) Differentiate between domestic wastewater and drinking water standards. 04

(c) Explain the methods of wastewater disposal and give a brief note on solid waste management. 07

OR

(a) Differentiate between W.C.B and Q.B system. **03**

(b) What is FRP? Write its uses. **04**

(c) Explain different water conservation techniques applicable to urban areas. **07**

**Q.4** (a) Write applications of surveying. **03**

(b) Explain the instruments used for linear measurements with neat sketches. **04**

(c) The following are bearings of a closed traverse ABCDA. Calculate interior angles and correct them if necessary.

07

| LINE | F.B     | B.B     |
|------|---------|---------|
| AB   | 45°00'  | 225°00' |
| BC   | 123°30' | 303°30' |
| CD   | 181°00' | 1°00'   |
| DA   | 289°00' | 109°00' |

**OR**

(a) Write the applications of Contour map. 03

(b) Write short notes on: Local attraction 04

(c) The following sequential readings were taken on a sloping ground. The first reading was taken on a B.M. of 50.00 m. Calculate R.L. of each point and apply arithmetical check. 0.450, 0.560, 0.785, 1.200, 2.500, 3.460, 0.320, 0.656, 0.985, 1.300. 07

**Q.5** (a) List the features of a smart city. 03

(b) Explain the applications of drone survey. 04

(c) What are the three segments of GPS? Describe them briefly. 07

**OR**

(a) Discuss aims and objectives of town planning. 03

(b) Explain the concept of green building with its advantages. 04

(c) Write a case study on water conservation projects such as Sardar Sarovar Dam, Kalpasar Project, or Riverfront Development. 07

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