

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-I&II EXAMINATION – SUMMER 2025

Subject Code:BE01000101

Date:16-06-2025

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.**

- | | | Marks |
|------------|---|--------------|
| Q.1 | (a) Define the civil engineering and enlist the branches of civil engineering. | 03 |
| | (b) Convert (i) 10 m ² to ___ ft ² (ii) 5 km to ___ meter (iii) 1 Acre to ___ m ²
(iv) 2 cubic meter to _____cu. Ft. | 04 |
| | (c) Enlist the various types of cement and discuss the properties with its uses. | 07 |
| Q.2 | (a) Enlist commonly used smart materials and explain any one. | 03 |
| | (b) Enlist principles of planning and describe any one in detail. | 04 |
| | (c) Draw cross section through window for a single wall for a residential building from foundation bottom to parapet top showing spread footing foundation for 30 cm thick wall. Label the components and provide dimensions. | 07 |
| | OR | |
| | (c) Draw the symbol of concrete, brick, wood, revolving door
And Write the abbreviation of PL, FSI, RCC | 07 |
| Q.3 | (a) Classify the buildings based on the structure. | 03 |
| | (b) Differentiate between BOD and COD. | 04 |
| | (c) Enlist various building services and objectives of building services. | 07 |
| | OR | |
| Q.3 | (a) Write drinking water quality standards as per BIS. | 03 |
| | (b) List the types of foundations. Explain various shallow foundations with sketch. | 04 |
| | (c) Define solid waste management. Give objectives and activities of solid waste management. | 07 |
| Q.4 | (a) Give difference between Surveyors and prismatic compass. | 03 |
| | (b) Draw the conventional symbols for Survey station, Temple, Lake, and Double railway line | 04 |
| | (c) Determine the value of included angles in the closed traverse ABCD in clockwise direction for the given below bearings. Apply necessary check also. | 07 |

LINE	Fore Bearing
AB	40°
BC	70°
CD	210°
DA	280°

OR

- Q.4** (a) Differentiate between W.C.B and Q.B system. **03**
(b) Enlist the various instruments used in chain survey with sketch. **04**
(c) The following consecutive readings were taken with a level and a 4meter levelling staff on a continuously sloping ground: 0.570, 1.235, 1.750, 2.220, 2.665, 3.410, 1.005, 1.835, 2.165, 3.550, 0.825, 0.965, 1.730 and 2.320. The reduced level of the first point was 100 mt. Calculate reduced level of all stations using the rise and fall method and apply check. **07**

- Q.5** (a) What is Total station? State its field applications. **03**
(b) Describe various uses of GPS technology. **04**
(c) Write short note on BRTS and Metro. **07**

OR

- Q.5** (a) Describe important features of green building. **03**
(b) Write a short note on rain water harvesting systems. **04**
(c) Give objectives of riverfront development project and Sardar sarovar project. **07**
