

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 3110004

Date: 09-01-2026

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.

	Marks
Q.1 (a) Define Civil Engineering and state its role in infrastructural development	03
(b) Enlist different types of cement. Explain properties of OPC and PPC.	04
(c) Describe properties and uses of any three: (i) Timber, (ii) Plastic, (iii) Fly ash, (iv) Bitumen.	07
Q.2 (a) Define: (i) Site plan (ii) Key plan (iii) Elevation.	03
(b) State and explain any two principles of planning a residential building.	04
(c) Discuss the necessity of town planning and advantages of zoning.	07

OR

(c) Explain causes, characteristics and effects of slums. Suggest preventive measures.	07
Q.3 (a) Enlist types of building loads with examples.	03
(b) Differentiate between English bond and Flemish bond in brickwork	04
(c) Draw a neat labeled cross-section of a wall showing major building components	07

OR

(a) Define building construction and list its main components.	03
(b) Explain the purpose of symbols in electrical and plumbing layouts.	04
(c) Enlist different types of foundation and explain Open footing.	07
Q.4 (a) Define: (i) Contour interval (ii) Benchmark (iii) Change point.	03
(b) Differentiate between WCB and QB system of bearings.	04
(c) The following bearings were taken of a closed traverse ABCD. Calculate the interior angles of the traverse.	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) Define ranging in surveying. Why is it required? **03**

(b) Differentiate between fly leveling and differential leveling. **04**

(c) The following readings are taken on continuously falling ground with staff of 4 m. They are 0.400, 0765, 1.270, 2.560, 3.220, 3.950, 0.390, 1.690, 3.500, 0.800, 1.920, 2.450, 3.980. Enter the readings in the page of level book and calculate the RLs of all the points if the first reading was taken on Benchmark of 100.00 m using Height of Instrument Method. **07**

Q.5 (a) Define Green building. List any three of its benefits. **03**

(b) Write short note on features of Smart City. **04**

(c) Explain Rainwater harvesting system with neat sketch. **07**

OR

(a) What is solid waste management? Give two methods of waste disposal. **03**

(b) Discuss the role of riverfront development in urban planning. **04**

(c) What is earthquake-resistant structures? Explain two principles used in their design. **07**
