

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 3 – EXAMINATION – SUMMER 2026

Subject Code: BE03006031

Date: 24/06/2026

Subject Name: BUILDING CONSTRUCTION AND TECHNOLOGY

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.**

- Q.1** (a) Why is it necessary to provide foundations for a structure? **03**
(b) Explain the design principles of a staircase. **04**
(c) Describe in detail the role of BIM in construction practices. **07**
- Q.2** (a) Explain the terms arches and lintels. **03**
(b) Discuss the important safety measures to be observed during the demolition of buildings. **04**
(c) Describe in detail the well point system for foundation dewatering. **07**
- OR**
- Q.2** (c) Discuss in brief (1) Pre-construction termite treatment, and (2) Needle scaffolding. **07**
- Q.3** (a) Describe horizontal slip formwork in brief. **03**
(b) What are the essential requirements of good formwork? **04**
(c) Discuss the precautions to be taken when constructing foundations in black cotton soils. **07**
- OR**
- Q.3** (a) Differentiate between a caisson and a cofferdam. **03**
(b) Discuss the conditions under which deep foundations are required. **04**
(c) Write a detailed note on the advantages and disadvantages of precast construction compared to cast-in-situ construction. **07**
- Q.4** (a) Write a brief note on sheet piles. **03**
(b) What is the purpose of conducting site exploration? **04**
(c) Discuss in brief the benefits of (1) Composite masonry and (2) Cavity walls. **07**
- OR**
- Q.4** (a) Define (1) Racking back, (2) Perpend, and (3) Queen closer. **03**
(b) What advantages does stone masonry have over brick masonry? **04**
(c) Enlist the types of shallow foundations. With the help of a neat sketch, briefly explain any two of them. **07**
- Q.5** (a) What are the advantages of a flush door? **03**
(b) Describe ashlar fine masonry with a sketch. **04**
(c) What are the types of floors? Explain the method of construction of cement concrete flooring. **07**

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| Q.5 | (a) Write a brief note on a flat arch. | OR | 03 |
| | (b) Explain the functions of a ventilator and describe how it differs from a window. | | 04 |
| | (c) Discuss in detail the conditions under which (1) Flat Roofs, and (2) Trussed Roofs, are provided. | | 07 |
