

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2024

Subject Code:3130607

Date:19-07-2024

Subject Name: Building Construction Technology

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) What is foundation? Explain the functions of a foundation. **03**
(b) Define: Composite masonry, hollow block masonry, partition wall, and cavity wall. **04**
(c) What do you understand by a formwork? Differentiate between pre-cast and cast-in-situ concrete construction. **07**
- Q.2** (a) What is meant by a green building? **03**
(b) Enlist the works which are considered as special works and enlist the treatments which are considered as special treatments. **04**
(c) Prepare a list of all building components with their functions. **07**
- OR**
- (c) How to plan a staircase for a residential building by considering the vertical distance between floors? Explain with a suitable example. **07**
- Q.3** (a) State difference between plastering and pointing in a single line. Discuss any four defects occurring in the painting. **03**
(b) Classify the lintels according to the materials used in their construction. Also classify the arches based on the material of construction, shape of curve formed by soffit, and based on number of centers. **04**
(c) Differentiate between English bond and Flemish bond. **07**
- OR**
- Q.3** (a) Prepare a list of methods used for control of groundwater in excavation and prepare a list of methods used for demolition of a structure. **03**
(b) Explain the purposes of timbering in trenches, scaffolding, shoring, and underpinning. **04**
(c) Why are cofferdams and diaphragm walls constructed? **07**
- Q.4** (a) For what reasons site exploration is done in the subsurface investigation? **03**
(b) Which are the precautions taken for foundations in black cotton soils? **04**
(c) What is meant by tilting caissons? What are its reasons? How the tilted caissons can be brought in the correct position? **07**
- OR**
- Q.4** (a) Define ventilator and fanlight with the figure. **03**
(b) Differentiate between paneled door and glazed door. **04**
(c) Which are the essential requirements of a good floor and good roof? **07**
- Q.5** (a) Explain the water-cement ratio. **03**
(b) Which are the factors considered for selection of a type of pile? **04**
(c) Explain with neat sketches, the formwork for the RCC column. **07**
- OR**
- Q.5** (a) What are the characteristics of green buildings? **03**
(b) Differentiate between fixed window and pivoted window. **04**
(c) Describe green building concepts and architectural planning. **07**
