

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 3130607

Date: 26-11-2024

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 are the factors affecting the choice of a particular method of site exploration? | 03 |
| (b) | Define with the sketch: Queen closer, Mitred closer, Bevelled closer, and Half bat. | 04 |
| (c) | Write a short note on the ingredients of reinforced cement concrete with their functions. | 07 |
- Q.2**
- | | | |
|-----|---|-----------|
| (a) | What are the benefits of a green building concept? | 03 |
| (b) | What is meant by thermal insulation? What are the advantages of it? | 04 |
| (c) | Write a short note on sash windows and casement windows with figures. | 07 |
- OR**
- | | | |
|-----|---|-----------|
| (c) | Draw a detailed sketch of a stair showing all its components and define scotia, nosing, and balustrade. | 07 |
|-----|---|-----------|
- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Differentiate between lintel and arch. | 03 |
| (b) | Write a short note on dry rubble masonry with a neat sketch. | 04 |
| (c) | Differentiate between English bond and Flemish bond with neat sketch. | 07 |
- OR**
- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Explain the specific circumstances under which timbering, shoring, and underpinning are provided. | 03 |
| (b) | How do you select the method of dewatering and control of ground water in excavation? | 04 |
| (c) | Write a short note on the factors affecting the choice of a particular type of coffer dam. | 07 |
- Q.4**
- | | | |
|-----|--|-----------|
| (a) | Make a chart that shows classifications of various types of piles. | 03 |
| (b) | What is meant by tilting of caissons? What are its reasons? | 04 |
| (c) | What are the problems of foundations in black cotton soil? What precautions are taken during foundation construction in black cotton soil? | 07 |
- OR**
- Q.4**
- | | | |
|-----|--|-----------|
| (a) | Define Mullion, Holdfast, and Jamb. | 03 |
| (b) | Give various sizes of doors for residential and public buildings. | 04 |
| (c) | Draw only neat sketches of a round-ended step, circular stairs, spiral stairs, and helical stairs. | 07 |
- Q.5**
- | | | |
|-----|--|-----------|
| (a) | Draw only neat sketches of a compound fink truss, compound howe truss, and modified north light truss. | 03 |
| (b) | Draw only a neat sketch showing all the components of a floor. | 04 |
| (c) | Draw only neat sketches of all types of pointing. | 07 |

OR

- Q.5**
- | | | |
|-----|---|-----------|
| (a) | What are the applications of 3D printing in building construction? | 03 |
| (b) | Explain the characteristics of good paint. | 04 |
| (c) | Draw only neat sketches of the formwork for the RCC wall and columns. | 07 |
