

# P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination  
November 2022

SECV2020 Building Materials & Construction Technology

30.11.2022, Wednesday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Make suitable assumptions and draw neat figures wherever required.
3. Use of scientific calculator is allowed.

### SECTION - I

|           |   | CO   | BTL |
|-----------|---|------|-----|
| Q - 1 (a) | What are the factors affecting choice of materials?                         | [05] | 1 1 |
| Q - 1 (b) | Discuss in brief manufacturing process of bricks                            | [05] | 1 2 |
| OR        |   |      |     |
| Q - 1 (a) | Explain briefly the various properties and requirements of good bricks      | [05] |     |
| Q - 1 (b) | Which factors you will consider for the choice of a building material?      | [05] | 1 2 |
| Q - 2 (a) | What is concrete? Discuss about various grades of concrete.                 | [05] | 2 2 |
| Q - 2 (b) | Enumerate the laboratory tests for cement and describe any one in detail.   | [05] | 2 4 |
| OR        |   |      |     |
| Q - 2 (a) | Define Water cement ratio. What is its importance in concrete?              | [05] | 2 1 |
| Q - 2 (b) | Enlist types of cement. What are the properties of cement?                  | [05] | 1 1 |
| Q - 3 (a) | Discuss in brief manufacturing process of bricks.                           | [05] | 2 2 |
| Q - 3 (b) | Enlist tests performed on aggregate. What are properties of aggregate?      | [05] | 2 1 |
| OR        |   |      |     |
| Q - 3 (a) | What is bitumen? What are the uses of bitumen in building construction?     | [05] | 1 2 |
| Q - 3 (b) | Discuss the importance of stones used in construction with its suitability. | [05] | 2 2 |

### SECTION - II

|           |   |      |       |
|-----------|---|------|-------|
| Q - 1     | Answer the following (Any Five)   | [05] |       |
| (i)       | Which tool is used for drilling a bore hole into the ground?                                    |      | 1 1   |
| (ii)      | What is brick masonry.  |      | 3 1   |
| (iii)     | What is the purpose of providing a frog in brick?   |      | 3 1/2 |
| (iv)      | Define composite masonry.   |      | 3 1   |
| (v)       | Define Jamb and Reveal.   |      | 4 1   |
| (vi)      | Define Deck Roof.   |      | 4 1   |
| (vii)     | What do you mean by cleats in the roof?   |      | 4 1/2 |
| Q - 2 (a) | What precautions are to be taken for the safety of foundation in black cotton soil?             | [05] | 1 1   |
| Q - 2 (b) | Enlist different types of joints in stone masonry and explain Dowel Joint.                      | [05] | 3 1/2 |
| OR        |   |      |       |
| Q - 2 (a) | Give classification of bricks according to quality and utility.                                 | [05] | 2 2/3 |
| Q - 2 (b) | Enlist different types of bonds in brick masonry.   | [05] | 3 2/3 |
| Q - 3 (a) | Give advantages of hollow concrete block masonry.   | [05] | 3 1   |
| Q - 3 (b) | Explain the factors on which the size, shape, location and number of windows in a room depends. | [05] | 4 1/2 |
| OR        |   |      |       |
| Q - 3 (a) | What are the common types of windows used in building construction?                             | [05] | 4 1   |

- Q - 3 (b) Difference between steel Roof Truss and Timber Roof Truss. [05] 4 1/2
- Q - 4 Attempt any one. [05]
- (i) Give requirements of a good stair. 4 1
- (ii) Explain Bifurcated Stair. 4 1

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CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

|             |               |           |
|-------------|---------------|-----------|
| 1: Remember | 2: Understand | 3: Apply  |
| 4: Analyze  | 5: Evaluate   | 6: Create |