

# GBCS SCHEME

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18CV643

## Sixth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Alternate Building Materials

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Explain the concept of energy embodied in building materials and buildings. (08 Marks)
- b. Explain the role of construction industry in global warming. (07 Marks)
- c. Explain the need for alternative building materials. (05 Marks)

**OR**

- 2 a. What are the commonly used environmental friendly and cost effective building technologies? Explain. (08 Marks)
- b. Explain rain water harvesting in building. (06 Marks)
- c. Discuss the buildings in different climatic conditions. (06 Marks)

### Module-2

- 3 a. Write short notes on :
  - i) Fal-G block
  - ii) Laterite blocks
  - iii) Stabilized mud block. (12 Marks)
- b. Discuss the properties and requirements of mortar. (08 Marks)

**OR**

- 4 a. List the factors influencing the compressive strength of masonry. Explain any two. (12 Marks)
- b. A brick masonry prism is made up of 5 bricks joined by mortar of thickness 2cm. The brick is 7.5cm in thickness. The prism is subjected to uniform vertical stress of 4MPa. The brick has a modulus of 500MPa and mortar has a modulus of 8000MPa. Determine the horizontal lateral stress in mortar and brick. Assume Poisson's ratio of brick and mortar is 0.1. (08 Marks)

### Module-3

- 5 a. Discuss about different sources of lime stone. (06 Marks)
- b. Name the different types of Pozzolana materials explain any two in detail. (08 Marks)
- c. List the applications of FRC composites in constructions. (06 Marks)

**OR**

- 6 a. List the different agro and industrial wastes. Explain their uses as building materials. (12 Marks)
- b. Explain the different types of fibres used in FRC composites. (08 Marks)

### Module-4

- 7 a. Explain any two alternatives for wall construction with neat sketches. (10 Marks)
- b. What is meant by ferrocement? List the materials used for ferrocement. Mention the applications of ferrocement. (10 Marks)

OR

- 8 a. Explain the :  
i) Composite beam and panel roofs (10 Marks)  
ii) Filler slab roofs. (10 Marks)  
b. List the advantages and disadvantages of Mivan construction techniques explain. (10 Marks)

**Module-5**

- 9 a. Explain the machine used for making stabilized mud blocks. (10 Marks)  
b. Write short notes on :  
i) Type of concrete mixers  
ii) Advantages of precast elements. (10 Marks)

OR

- 10 a. List the various alternatives available for production of precast elements. (05 Marks)  
b. Explain cost saving techniques in construction. (10 Marks)  
c. List various alternatives available for load bearing masonry which may result in cost saving. (05 Marks)

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