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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## September / October 2024 Supplementary Examinations

**Programme: B.E.**

**Semester: V**

**Branch: Civil Engineering**

**Duration: 3 hrs.**

**Course Code: 20CV5PEABM**

**Max Marks: 100**

**Course: Alternative Building Materials and Technologies**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

### UNIT - I

1 a) What is embodied energy and life cycle energy? Explain their significance. **10**  
Mention about green building rating systems.

b) Explain environmental friendly and cost effective building technologies. **10**

### UNIT - II

2 a) What are stabilized mud blocks? Explain the concept and characteristics of SMBs. **10**

b) List and explain the factors affecting the compressive strength of masonry. **10**

### UNIT - III

3 a) List the various types of agro and industrial wastes that can be used as an alternative construction material. Explain them briefly. **10**

b) Discuss the need and advantages of using C & D waste. Mention its application with relevance to today's construction industry. **10**

### OR

4 a) (i). Define 'marginal materials'. Explain the term with relevant examples. **05**  
(ii). Write the properties and applications of crumb rubber and fibre reinforced polymers. **05**

b) Discuss the properties of lime – pozzolana cement? Write a note on the manufacturing process and uses of LPC. **10**

### UNIT - IV

5 a) Sketch the details of a typical ferro-cement element, indicating the components. Explain the properties of its constituent materials. **10**

b) Discuss the different types of fibres used in concrete. **10**

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

## **UNIT - V**

6 a) Discuss the various alternate technologies that are available for roofing systems. **10**

b) Mention some of the typical filler materials that can be used in a filler slab construction. Draw a typical c/s of filler slab and discuss the mechanism in terms of its performance. **10**

## **OR**

7 a) Discuss the salient features of masonry vaults and domes. **10**

b) Highlight the advantages of pre-cast technologies. **10**

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SUPPLEMENTARY EXAMS 2024