



**K.S.Group of Institutions, Bangalore-560109**

**K.S. School of Engineering & Management**

**Question Bank**

**Department: Civil Engineering**

**Semester: VI**

**Subject: Alternative Building Materials**

**Subject Code: 18CV643**

**Faculty In-charge: Manjunath B**

## **Module-1**

### **Introduction**

1. Explain the need for alternate building materials.
2. Discuss about green building concepts.
3. Explain about Rainwater harvesting and list the methods, merits and demerits.
4. What are the commonly used environmentally friendly and cost-effective building technologies? Explain any two.
5. Explain the concept of energy embodied in building materials.
6. Explain the role of construction industry in global warming.
7. What are the advantages of LEED? List out the five main credit categories in LEED rating system.
8. Discuss environmental issues related to the following building materials (i)Brick (ii)Timber (iii)Stone (iv)Marble (v)Mangalore Tile
9. Explain different categories of energy consumption in a building.

## **Module-2**

### **Elements of Structural Masonry**

10. What are the alternatives for conventional stone and bricks in masonry?
11. List out the characteristics of concrete blocks.
12. Explain the process of manufacturing stabilized mud blocks.

### **Structural Masonry and Mortars**

13. List out the requirements of mortar.
14. List and explain the properties of good mortar.

15. Write a note on: (i) Fal-G blocks (ii) Laterite blocks.
16. What are the factors affecting the compressive strength of masonry?
17. A brick masonry prism is made up of 5 bricks joined by mortar of thickness 20mm. The brick is 75mm in thickness. The prism is subjected to a uniform vertical stress of 4.0 N/mm<sup>2</sup>. The brick has a modulus of 500 N/mm<sup>2</sup> and mortar has a modulus of 8000 N/mm<sup>2</sup>. Determine the horizontal lateral stress in brick and mortar. Take  $\mu_b=0.1$  and  $\mu_m=0.15$ .

## **Module-3**

### **Alternative Building Materials**

18. Discuss about different sources of limestones.
19. Name the different types of pozzolana materials. Explain any two in detail.
20. What is meant by GFRP? List the fiber reinforcing materials.
21. List the agro wastes and mention its applications in building construction.
22. List the different industrial wastes. Explain their use as a building material.
23. What are the sources of industrial wastes?
24. Write short note on construction and demolition wastes. Mention its merits and demerits.
25. Write the properties and uses of lime pozzolana cement.
26. List out the different methods employed in manufacturing of FRP and explain any one in brief.
27. Explain the applications of FRP composites.

## **Module-4**

### **Alternative Building Technologies**

28. Explain any two alternatives for wall construction with neat sketches.
29. What is meant by ferrocement? List the materials used for ferrocement and mention its applications. Explain its construction methods in brief.
30. List out the advantages and disadvantages of Mivan Construction Techniques.

### **Alternative Roofing Systems**

31. What are the primary functions of a roof? Explain briefly the various roofing alternatives.
32. Write the concepts of filler slab method and explain any two methods in detail.
33. Write short notes on:

- (i) Composite beam and panel roofs
- (ii) Construction of masonry domes and vaults.

34. Explain the process of constructing masonry domes and vaults.

## Module-5

### Equipment for Production of Alternative Materials

35. Briefly explain about:

- (a) Types of machines used for manufacture of concrete
- (b) Methods of production of precast elements

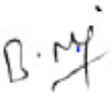
36. Explain the cost saving techniques in planning, design and construction.

37. Write the difference between conventional and alternative building materials.

38. Write a note on:

- (i) Types of concrete mixer
- (ii) Cost concept in building.

39. What are the equipments used for producing stabilized blocks? Explain them in brief.

  
Course in charge

  
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