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Total No. of Questions: [09]

B. Tech Civil Engg. (Semester – 3rd)

BUILDING MATERIALS & CONSTRUCTION

Subject Code: BCIES1324

Paper ID: [19110704]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a) What are the harmful ingredients in brick earth and how do they affect the quality of bricks?
b) Define seasoning of timber. Why is seasoning important for construction purposes?
c) What are the qualities of a good building stone?
d) What is hydraulicity in lime and why is it important?
e) List two types of tests conducted on cement and briefly describe their purpose.
f) What is workability of concrete and name two factors that affect it?
g) Differentiate between shallow and deep foundations.
h) Explain the advantages of using cement concrete hollow blocks in construction.
i) Mention two preventive measures to avoid dampness in buildings.
j) What are the common defects observed in plastering?

Section – B **(5 marks each)**

Q2. Discuss the classification of bricks and explain the different tests conducted to assess the quality of bricks.

Q3. Explain the different defects in timber and how they can affect its structural performance in construction.

Q4. Describe the manufacturing process of Portland cement and explain how hydration of cement contributes to its strength.

Q5. Explain the process of determining the workability of concrete and discuss the methods used to enhance workability.

Q6. Compare and contrast the different types of bonds used in brick masonry, mentioning their merits and demerits.

Section – C **(10 marks each)**

Q7. Discuss in detail the qualities of a good building stone, the causes of deterioration in stones, and the methods used for their preservation. Provide examples of common building stones used in India and their specific applications.

Q8. Elaborate on the batching, mixing, and manufacturing process of cement concrete. Discuss the factors affecting the strength of concrete and the tests used to determine its strength.

Q9. Explain the different methods of plastering and the materials used in the process. Discuss the various types of floors used in buildings, and the factors that influence the selection of suitable flooring for different construction projects.