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Question Paper Code: ACE007



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech IV Semester End Examinations (Regular) - May, 2018

Regulation: IARE – R16

## BUILDING MATERIALS CONSTRUCTION AND PLANNING

Time: 3 Hours

(CE)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

### UNIT – I

- (a) Describe the characteristics of good building stones. Explain relation to their structural requirements. [7M]  
(b) What are the different methods of quarrying of stone? Explain the method of quarrying by blasting. [7M]
- (a) Explain the working of Hoffman's kiln for the burning of bricks with neat sketch. [7M]  
(b) What is meant by bulking of sand? Explain the test procedure for finding the bulking of sand with neat sketch. [7M]

### UNIT – II

- (a) What are the different types of ingredients in cement? Explain their functions in details. [7M]  
(b) What is setting of cement? How initial and final setting of cement is determined in the laboratory? [7M]
- (a) Explain in detail about the laboratory tests conducted on concrete by Vee-bee test. [7M]  
(b) What is meant by admixture? Explain about super plasticizers in detail. [7M]

### UNIT – III

- (a) Discuss the step by step process of laying of Mosaic flooring in detail. [7M]  
(b) Describe the construction procedure of the Madras terrace roof with neat sketch. [7M]
- (a) What is pile foundation? Explain in detail about the classifications of pile foundations? [7M]  
(b) What is meant by cement concrete floor? Explain merits and demerits of cement concrete floor. [7M]

#### UNIT – IV

7. (a) Describe the manufacturing process, properties and uses of aluminum. [7M]  
(b) What are the various manufacturing process of steel? Explain were they are used in construction process. [7M]
8. (a) Explain different types of defects in timber that occur due to natural forces. [7M]  
(b) Write the advantages and disadvantages of brick masonry over stone masonry. [7M]

#### UNIT – V

9. (a) Briefly explain the requirements of a good staircase. Discuss the parts of stair case. [7M]  
(b) What are the different types of buildings? Explain in detail about building by laws. [7M]
10. (a) Where do you use the following types of stairs? Explain each with neat sketch [7M]  
i. Dog-legged stair  
ii. Open newel stair.
- (b) What are the general principles of building planning? Explain any two principles in detail. [7M]

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