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**INSTITUTE OF AERONAUTICAL ENGINEERING**

(Autonomous)

Dundigal-500043, Hyderabad

**B.Tech IV SEMESTER END EXAMINATIONS (REGULAR) - JULY 2022**

Regulation:UG20

**BUILDING MATERIALS -PLANNING AND CONSTRUCTION****Time: 3 Hours****(CIVIL ENGINEERING)****Max Marks: 70****Answer ALL questions in Module I and II****Answer ONE out of two questions in Modules III, IV and V**

(NOTE: Provision is given to answer TWO questions from among one of the Modules III / IV / V)

**All Questions Carry Equal Marks****All parts of the question must be answered in one place only****MODULE – I**

1. (a) Describe the construction and working of Bull's trench kiln. Differentiate between clamp burning and kiln burning. [BL: Understand| CO: 1|Marks: 7]
- (b) Illustrate the manufacturing process of bricks with necessary flow chart. Describe various varieties of dressing of stones [BL: Apply| CO: 1|Marks: 7]

**MODULE – II**

2. (a) Discuss why gypsum is added during the manufacture of cement? Enumerate the various types of cement available in the market. [BL:Remember| CO: 2|Marks: 7]
- (b) What are air entraining agents? How these air entraining agents help in improving performance of cement? [BL: Understand| CO: 2|Marks: 7]

**MODULE – III**

3. (a) Distinguish with the help of sketches between a wall in English bond and a wall in Flemish bond. [BL: Remember| CO: 3|Marks: 7]
- (b) Mention the properties of good timber. Classify the types of wood used in buildings and explain in detail. [BL: Understand| CO: 3|Marks: 7]
4. (a) Outline the alternative materials for wood. Discuss the desirable properties of reinforcing steel in construction industry. [BL: Understand| CO: 4|Marks: 7]
- (b) Describe in detail about rubble and Ashlar masonry and state their use in construction of structures. [BL: Understand| CO: 4|Marks: 7]

**MODULE – IV**

5. (a) Summarize the functions of arches and lintels. Discuss relative merits and demerits of lintels over arches. [BL: Understand| CO: 5|Marks: 7]
- (b) Write about prefabricated roof. Explain their use in building construction. Draw king post trusses. [BL: Understand| CO: 5|Marks: 7]
6. (a) Enumerate the following items in case of staircases i) Balustrade ii) Handrail iii) Soffit iv) Pitch [BL: Remember| CO: 5|Marks: 7]

- (b) Plan a dog legged stair for a building in which the vertical distance between the floors is 3.6m. The stair hall measures 2.5mX 5m. [BL: Apply| CO: 5|Marks: 7]

### MODULE – V

7. (a) List out different principles in planning a building. State the importance of site plan and location plan in the engineering drawing. [BL: Remember| CO: 6|Marks: 7]  
(b) What are the minimum standards for various parts of building as per national building code (NBC)? Describe in detail. [BL: Understand| CO: 6|Marks: 7]
8. (a) Briefly explain the following: i) Roominess ii) Circulation iii) Flexibility iv) Grouping. Give example of each type [BL: Understand| CO: 6|Marks: 7]  
(b) Classify different type of buildings as per bye-laws. Explain the function of each type of building along with examples. [BL: Understand| CO: 6|Marks: 7]

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