

B.Arch. Examination, (Supplementary)2023

(1st Year, 1st Semester)

Materials & Methods of Construction-I

Time : 3 hrs

Maximum Marks: 100

Note: Questions 1 is Compulsory.

Answer any 5 from the remaining questions

Q1. (a) Write Short Notes on: Any 10 (Make necessary sketches) (2 marks each) (20 marks)

- i. Modular Size of Brick
- ii. Function of Silica in Brick earth preparation
- iii. Types of Gravity Loads.
- iv. Function of Gypsum in Cement Manufacturing process
- v. Natural Bed of Stone
- vi. Rate of Hydration of Bogue compounds in cement and its importance
- vii. Seasoning of Timber
- viii. Tangential Sawing
- ix. Role of impurities in Limestone like clay and magnesium carbonate in lime.
- x. Puzzolonas and their types
- xi. Argillaceous Rocks with examples
- xii. Sulphate Attack in cement

(b) Explain briefly on various physical and mechanical properties of building materials.
(5marks)

Q2. Differentiate between:(Any 3) Make necessary sketches) (5 marks each) (15 marks)

- i. First Class Bricks & Fourth Class Bricks
- ii. Bulls Trench Kiln and Hoffmann's Kiln
- iii. Wet Rot and Dry Rot in Timber
- iv. Heating and Wedging methods of stone quarrying
- v. Hydraulic Lime and Hydrated Lime

Q3. Name any 5 types of stones used in building construction, and based on the properties explain their uses in construction. (15 marks)

Q4. Explain the process of slaking and its importance? Give any 3 uses of slaked lime in construction. (15 marks)

Q5. Explain 5 various types of cement based on the quantity and composition of Alite, Belite, Celite & Felite (or Bogue Compounds) used in construction. (15 marks)

Q6. Explain the advantages of Portland Puzzolanic Cement or Portland Slag Cement over Ordinary Portland Cement. (15 marks)

Q7. Name 5 wood based products, their characteristics and use in construction works.(15 marks)

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Q8. Draw the Plans, Elevation and Isometric view of T- Joint of One Brick Thick Wall in Rat Trap Bond. Take Size of the Brick as- 250mm x 125mm x 75mm, Scale:1:10
(15 marks)

OR

Q9. Draw the Plans, Elevation and Isometric view of T- Joint of One Brick Thick Wall in Flemish Bond. Take Size of the Brick as- 250mm x 125mm x 75mm, Scale:1:10
(15 marks)

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