

B.Arch. Examination, 2021-22

(1st Year, 1st Semester)

Materials & Methods of Construction-I

Time : 3 hrs

Maximum Marks: 100

Note: Questions 1 and 2 are Compulsory.

Answer any 4 questions from Q3 to Q7

Answer any 1 (one) question from Q8 and Q9

Q1. Write Short Notes on:(Make necessary sketches) (3 marks each) (30 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

Q2. Differentiate between:(Make necessary sketches) (3 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. (10 marks)

Q4. Explain the process of slaking and its importance? Give any 3 uses of slaked lime in construction. (10 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. (10 marks)

Q6. Explain the advantages of Portland Puzzolanic Cement or Portland Slag Cement over Ordinary Portland Cement. (10 marks)

Q7. Explain the process of soundness test and consistency test in cement and their importance. (10 marks)

Ref. No.: Ex/Arch/T/111/2022

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)

-----End of Question Paper-----