

B.Arch. Examination, 2024(1st Year, 1st Semester)**Materials & Methods of Construction-I**

Time: 3 hrs

Maximum Marks: 100

Note: Questions 1 is Compulsory.

Answer any 5 from remaining questions

Q1. A (Fill in the Blanks)**10 marks**

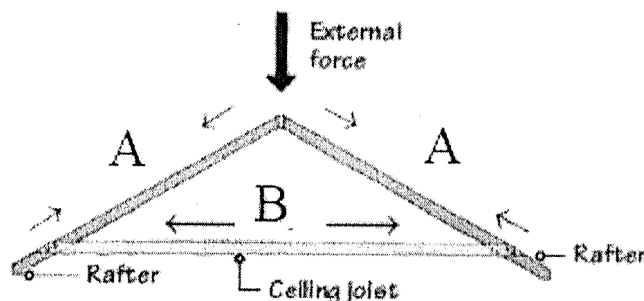
1. Consistency Test of cement is done with _____ apparatus.
2. The type of brick used to remove vertical joints in brick masonry is _____.
3. The dimensions of Modular Size bricks is _____.
4. Whitish crystalline substances which appears on the surface due to presence of salts in plaster making materials and also in bricks is known as _____.
5. The minimum thickness of a wall where Single Flemish bond can be used is _____.
6. The parent rock of quartzite rock is _____.
7. The chief constituent of argillaceous rock is _____.
8. Overburnt bricks are also known as _____.
9. Gypsum is added to control the _____ of cement.
10. The ability of a material to withstand prolonged action of high temperature without melting or losing shape is known as _____.

B Write short notes on : Any 5 (2 marks each)**10 marks**

- i. Function of Silica and Alumina in Brick earth preparation
- ii. Types of Gravity Loads.
- iii. Sulphate Resistant Cement
- iv. Seasoning of Timber
- v. Soundness Test of Cement
- vi. Toughness and Rigidity in Stress-Strain

C. Identify the required

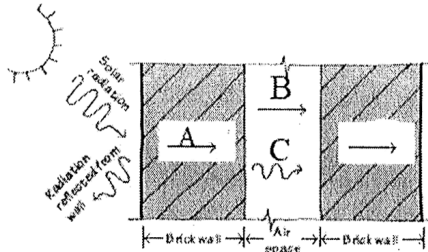
- i. Identify A, B (Types of Force in A & B)

2 marks

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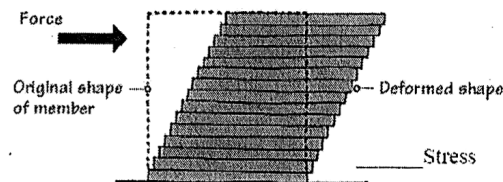
ii. Identify A, B (Modes of heat Transfer in A & B)

2 marks



iii. Identify the type of stress developed due to the force applied

1 marks



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

(15 marks)

- Blending and Tempering in Brick Earth preparation
- Bulls Trench Kiln and Hoffmann's Kiln
- Wet Rot and Dry Rot in Timber
- Rapid Hardening cement and Low Heat Portland cement
- U-value and R-value of a material

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 advantages of Portland Pozzolanic Cement or Portland Slag Cement over Ordinary Portland Cement.

(15 marks)

Q5. i. Explain the process of Fineness test and consistency test in cement and their Importance.

(10 marks)

ii. Why is gypsum added in cement manufacturing process

(5 marks)

Q6. i. What is seasoning in timber?

(3 marks)

ii. Give Advantages of seasoning.

(5 marks)

iii. Briefly explain the process of kiln seasoning.

(7 marks)

Q7. 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

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)