

B.Arch. Examination, 2025(1stYear, 1stSemester)**Materials & Methods of Construction-I**

Time: 3 hrs

Maximum Marks: 100

Note: Questions 1 is Compulsory.

Answer any 5 questions from the remaining questions

Q1. A (Fill in the Blanks)

(10 marks)

1. Soundness Test of cement is done with _____ apparatus.
2. The vertical joints in brick masonry are known as _____.
3. The dimensions of Nominal Size bricks is _____.
4. A piece of timber with thickness not exceeding 50mm and the width exceeding 50mm is called _____.
5. _____ trees do not show distinct annual rings.
6. _____ is known as the amount of heat stored in a material.
7. _____ materials are those for which ultimate strain is $\leq 0.5\%$.
8. Full form of AAC blocks _____.
9. For stratified rocks _____ method of quarrying is used.
10. The process of heating a mixture of clay, quartz, feldspar and silica to create a glass like structure is known as _____.

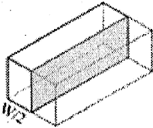
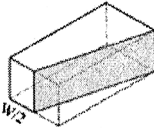
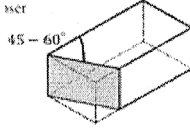
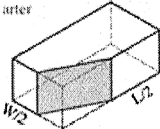
B Write short notes on: Any 5 (2 marks each)

(10 marks)

- i. Physical Classification of Rocks
- ii. Classification of trees based on Growth
- iii. Lime Cycle
- iv. Leaching of Lime
- v. Coping Bricks
- vi. Tangential Sawing

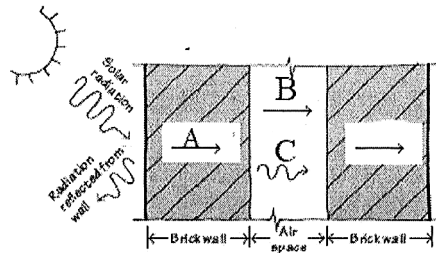
C. Identify the required**i. Identify the type of Brick (1,2,3,4)**

(2 marks)

			
1=	2=	3=	4=

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

(3 marks)



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

(15 marks)

- i. Hydraulic Lime and Hydrated Lime
- ii. Stratified Rocks and Foliated rocks
- iii. Wet Rot and Dry Rot in Timber
- iv. Stoneware and Earthenware
- v. U-value and R-value of a material

Q3. i. Briefly explain the composition of good brick earth describing the effect and properties of the constituents .

(10 marks)

ii. What is the effect of Potassium Nitrate (Saltpeter) in Brick Earth preparation?

(2 marks)

iii. What are Refractory Bricks and its types?

(1+2 = 3 marks)

Q4. i. Complete the Following Table below:

(10 marks)

Sr. No.	Use Area	Type of stone	Function/Reason
01.	Buildings in Sea Shore		
02.	Road Metals ,Railway Ballast		
03.	Arches of Buildings		
04.	Face work of Buildings		
05.	Heavy engineering works		

ii. Briefly explain Chemical classification of Rocks with examples

(5 marks)

Q5.

i. What do you mean by pozzolanic materials? Briefly explain why pozzolanic cement is better than ordinary Portland cement.

(2+8 =10 marks)

ii. What is slaking of lime? Why is it important?

(2+3=5 marks)

- Q6.** i. Briefly explain the types of cement below: (5x2 =10 marks)
Low Heat Cement, Sulphate Resisting Cement, High Alumina cement,
Air Entraining cement, Hydrophobic Cement
- ii. Differentiate between setting and Hardening of cement. (3 marks)
- iii. Explain the role of gypsum in cement manufacturing (2marks)
- Q7.** i. What is seasoning in wood and why is it important? (2+3=5 marks)
- ii. Briefly explain any two methods of preservation of timber? (5 marks)
- iii. What are the various forms of processed wood and their uses? (5marks)
- 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 125mmx 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 125mmx 75mm, Scale:1:10 (15 marks)

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