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**BTECH**  
**(SEM IV) THEORY EXAMINATION 2023-24**  
**MATERIALS, TESTING & CONSTRUCTION PRACTICES**

**TIME: 3 HRS****M.MARKS: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

a.	Define building materials and discuss their role in construction.	02
b.	Enlist the factors affecting strength of timber.	02
c.	Define cement paints and explain their composition.	02
d.	Define thermal insulating materials and provide one example.	02
e.	Name four primary components of a building structure.	02
f.	State damp proofing in building construction.	02
g.	Explain the function of a lintel in building construction.	02
h.	Describe two benefits of incorporating kharjas in building facades.	02
i.	Outline three principles that guide effective building maintenance.	02
j.	State the importance of firefighting systems in building safety.	02

**SECTION B****2. Attempt any three of the following:****3 x 10 = 30**

a.	Explain the physical and chemical properties of gypsum plaster.	10
b.	Discuss the classification of plastics based on their chemical structure and properties.	10
c.	Classify various types of floors found in buildings based on construction methods and materials used.	10
d.	Compare and contrast different type of window with their advantages and disadvantages.	10
e.	Define HVAC systems and their role in maintaining indoor comfort and air quality in buildings.	10

**SECTION C****3. Attempt any one part of the following:****1 x 10 = 10**

a.	Classify clay bricks based on composition, manufacturing method, and application.	10
b.	Discuss the applications and advantages of different types of cement in construction and infrastructure projects.	10

**4. Attempt any one part of the following:****1 x 10 = 10**

a.	Describe the chemical composition of common ferrous metals such as carbon steel and stainless steel, and how alloying elements affect their properties.	10
b.	Discuss the advantages of using cement paints in construction, particularly for exterior surfaces and masonry.	10

**5. Attempt any one part of the following:****1 x 10 = 10**

a.	Discuss the importance of anti-termite treatment, outlining effective strategies and treatments to protect buildings from termite infestation and structural damage.	10
b.	Define cavity wall construction and its advantages in terms of thermal insulation, moisture control, and structural stability.	10

**6. Attempt any one part of the following:****1 x 10 = 10**

a.	Discuss the fundamental principles that guide effective building planning and design.	10
b.	Define roof treatments and their role in enhancing the performance and lifespan of roofs.	10



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**TIME: 3 HRS**

**M.MARKS: 100**

7. Attempt any *one* part of the following:

1 x 10 = 10

a.	Describe the components of a typical water supply system in buildings, including water sources, distribution networks, and fixtures.	10
b.	Differentiate between pointing, distempering, colour washing, and painting as surface finishing methods, emphasizing their applications and aesthetic effects.	10

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