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**BTECH**  
**(SEM V) THEORY EXAMINATION 2023-24**  
**MODERN CONSTRUCTION MATERIALS**

TIME: 3 HRS

M.MARKS: 100

**Note:** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt all questions in brief.**

**2 x 10 = 20**

Q no.	Question	Marks	CO
a.	What are smart building materials?	2	1
b.	Discuss fly ash bricks.	2	1
c.	Name two types of waste materials.	2	2
d.	Explain geosynthetics.	2	2
e.	What is nuclear concrete?	2	3
f.	Define prefabricated systems in construction.	2	3
g.	Explain polymer concrete composite.	2	4
h.	Name one property that is enhanced by the infiltration of sulphur in concrete.	2	4
i.	What are polyurethane membranes?	2	5
j.	What is PVC?	2	5

**SECTION B**

**2. Attempt any three of the following:**

**10x3=30**

a.	Explain soil-cement blocks. How does the production process of soil-cement blocks contribute to sustainability?	10	1
b.	What characterizes bituminous material? Discuss its primary application.	10	2
c.	What is ferrocement? How does ferrocement enhance the durability?	10	3
d.	Define fiber-reinforced polymers. How do FRPs enhance the mechanical properties of polymers?	10	4
e.	Define sound insulation and its significance in the design of buildings.	10	5

**SECTION C**

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

**10x1=10**

a.	Explain RFPC. What are the potential applications of RFPC in construction?	10	1
b.	Explain the classification of glass-reinforced gypsum.	10	1

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

**10x1=10**

a.	What are the common metals used in construction, and why are they preferred?	10	2
b.	Discuss the property of lightweight concrete that sets it apart from regular concrete.	10	2

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

**10x1=10**

a.	Discuss different types of fibers used in construction materials.	10	3
b.	Explain heat-resisting and refractory concrete.	10	3



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Subject Code: KCE052

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**6. Attempt any *one* part of the following: 10x1=10**

a.	Define polymers. How do polymers contribute to the durability and sustainability of building materials?	10	4
b.	Define sulphur concrete and its composition.	10	4

**7. Attempt any *one* part of the following: 10x1=10**

a.	What are waterproofing materials? How have advancements in modern waterproofing materials improved their effectiveness?	10	5
b.	Discuss the key advantages of using polymer-based finishes for flooring.	10	5

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