

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)



M.Tech. (Second Semester - Regular) Examinations, May – 2026

24MCTPE12001 – Advanced Construction Materials

Time: 3 hrs

Maximum: 60 Marks

(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

- | | CO # | Blooms Level |
|--|------|--------------|
| a. What are the thermo-physical properties of materials? | CO1 | K1 |
| b. List different types of lime used in construction. | CO2 | K1 |
| c. What is depolymerisation? | CO3 | K1 |
| d. What is ferrocement? | CO4 | K1 |
| e. Define adhesives and sealants. | CO4 | K1 |

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

- | | Marks | CO # | Blooms Level |
|---|-------|------|--------------|
| 2. a. Explain the classification of construction materials with examples. | 5 | CO1 | K2 |
| b. Describe thermo-physical properties and their significance in construction. | 5 | CO1 | K2 |
| (OR) | | | |
| c. Explain the stress–strain behaviour of construction materials with diagrams. | 5 | CO1 | K2 |
| d. Apply the use of waste products in the construction industry with suitable examples. | 5 | CO1 | K3 |
| 3.a. Explain the process of hardening of lime. | 5 | CO2 | K2 |
| b. Discuss pozzolanic materials and their applications. | 5 | CO2 | K2 |
| (OR) | | | |
| c. Discuss the classification and properties of ceramic materials. | 5 | CO2 | K2 |
| d. Apply refractory materials in construction and explain their applications with suitable examples. | 5 | CO2 | K3 |
| 4.a. Discuss depolymerisation and its significance. | 5 | CO3 | K2 |
| b. Explain the effect of temperature on the mechanical properties of polymers. | 5 | CO3 | K2 |
| (OR) | | | |
| c. Illustrate the use of light-gauge steel in a building project with appropriate applications. | 5 | CO3 | K3 |
| d. Explain the uses of polymeric materials in construction. | 5 | CO3 | K2 |
| 5.a. Explain the corrosion of concrete in different environments. | 5 | CO4 | K2 |
| b. Discuss the modelling of composite materials. | 5 | CO4 | K3 |
| (OR) | | | |
| c. Explain architectural applications of composites. | 5 | CO4 | K2 |
| d. Discuss aesthetic considerations of composite materials. | 5 | CO4 | K3 |
| 6.a. Explain types and applications of adhesives in construction. | 5 | CO4 | K2 |
| b. Discuss sealants and their importance in structures. | 5 | CO4 | K2 |
| (OR) | | | |
| c. Illustrate the use of structural elastomeric bearings in a real or hypothetical structure with appropriate applications. | 5 | CO4 | K3 |
| d. Explain the long-term performance and durability of FRP materials. | 5 | CO4 | K2 |

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