

**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)**



M.Tech. (Second Semester) Regular Examinations, July – 2025

24MCTPE12001– Advanced Construction Materials

(Construction Technology And Management)

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. List three thermo-physical properties of construction materials. | CO1 | K1 |
| b. What are green building materials? Give examples. | CO2 | K1 |
| c. Name two types of lime used in construction. | CO3 | K1 |
| d. What are pozzolanic materials? Mention any two. | CO4 | K1 |
| e. Define polymerization and depolymerisation. | CO5 | K1 |

PART – B

(10 x 5 = 50 Marks)

Answer **ALL** the questions

- | | Marks | CO # | Blooms
Level |
|--|-------|------|-----------------|
| 2. a. Explain classifications of construction materials and their selection criteria. | 5 | CO1 | K2 |
| b. Discuss the mechanical and thermo-physical properties of modern materials. | 5 | CO1 | K3 |
| (OR) | | | |
| c. Write about green building materials and use of recycled materials. | 5 | CO1 | K4 |
| d. Describe the reuse of waste products in construction material production. | 5 | CO1 | K3 |
| 3.a. Explain properties of lime and its role in lime concrete. | 5 | CO2 | K2 |
| b. Describe the types and properties of mortars used in construction. | 5 | CO2 | K3 |
| (OR) | | | |
| c. Discuss ceramic materials and their construction applications. | 5 | CO2 | K3 |
| d. Write about the use of pozzolanic materials and admixtures in mortar and concrete. | 5 | CO2 | K4 |
| 4.a. Define polymerization and explain types of polymers used in civil engineering. | 5 | CO3 | K2 |
| b. Discuss rubber and plastics as construction materials and their thermal behavior. | 5 | CO3 | K3 |
| (OR) | | | |
| c. Explain the types and uses of structural steels including stainless steel. | 5 | CO3 | K2 |
| d. Compare and contrast special and light gauge steels. | 5 | CO3 | K4 |
| 5.a. Explain corrosion mechanisms in reinforced concrete in different environments. | 5 | CO4 | K2 |
| b. Write in detail about methods to prevent corrosion in steel. | 5 | CO4 | K3 |
| (OR) | | | |
| c. Explain the use and properties of ferrocement and its application in modern construction. | 5 | CO4 | K3 |
| d. Discuss polymers in civil engineering with emphasis on fiber composites. | 5 | CO4 | K4 |
| 6.a. Describe the concept and application of polymer foams in building physics. | 5 | CO5 | K3 |
| b. What are polymer concrete composites? List types and applications. | 5 | CO5 | K2 |
| (OR) | | | |
| c. Discuss elastomeric bearings and their significance in construction. | 5 | CO5 | K3 |
| d. Explain structural adhesives and their characteristics. | 5 | CO5 | K3 |

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