

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



M.Tech. (First Semester – Regular/Supplementary) Examinations, January – 2026
24MSEPE11021- Advanced Construction Materials
(Structural Engineering)

Time: 3 hrs

Maximum: 60 Marks

Answer ALL questions
(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 do you mean by shrinkage of concrete?	CO1	K1
b. Differentiate between HSC and HPC.	CO2	K2
c. What is the effect of fly ash on fresh concrete?	CO3	K2
d. State the composition of an OPC?	CO4	K2
e. State the role of accelerator and retarder in Concrete Preparation?	CO4	K2

PART – B

(10 x 5 = 50 Marks)

Answer ALL the questions

	Marks	CO #	Blooms Level
2. a. Explain any three tests for fresh concrete in detail	5	CO1	K1
b. Explain any three tests for hardened concrete in detail	5	CO1	K1
(OR)			
c. Write in detail about Self Compacting Concrete	5	CO1	K2
d. Write in detail about High Strength Concrete	5	CO1	K3
3.a. What do you mean by non-destructive method of concrete	5	CO2	K2
b. Explain various methods of non-destructive tests	5	CO2	K3
(OR)			
c. What is ready mix concrete? Discuss on the classification	5	CO2	K2
d. State the uses of ready mix concrete.	5	CO2	K3
4.a. What do you mean by rheology of concrete? What are various parameters to determine the suitability of concrete mix?	5	CO3	K2
b. What do you mean by workability of concrete? Explain any one laboratory test to measure workability of concrete?	5	CO3	K3
(OR)			
c. describe the various types of fibers that are used in concrete	5	CO3	K2
d. what are the various types of composite materials and their use ?	5	CO3	K3
5.a. What are tests made for steel used in reinforced concrete construction	5	CO4	K2
b. Explain in details heat treatment of steel	5	CO4	K3
(OR)			
c. State the applications for various fiber reinforced plastic in sandwich panels	5	CO4	K2
d. Explain about the various fiber reinforced plastic in sandwich panels	5	CO4	K3
6.a. What are the various types and uses of composite materials	5	CO5	K2
b. What are the various modeling of fiber reinforced concrete	5	CO5	K3
(OR)			
c. What are the classifications of Glass?	5	CO5	K2
d. Describe the process of manufacturing of Glass? What are the Uses of glass in construction industry?	5	CO5	K3

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