

[M19 ST 1109]

**I M. Tech I Semester (R19) Regular Examinations
 ADVANCED CONCRETE TECHNOLOGY
 (CIVIL ENGINEERING)
 MODEL QUESTION PAPER**

TIME: 3 Hrs.

Max. Marks: 75 M

Answer **ONE Question** from **EACH UNIT**

All questions carry equal marks

			CO	KL	M
		UNIT - I			
1.	a).	What are the factors promoting the alkali-aggregate reaction? Explain any two of them?	CO1	1	8
	b).	State the importance of using Admixtures in concrete and explain Plasticizers-Super plasticizers?	CO1	2	7
		OR			
2.	a).	What are Bogues compnds? Explain them by stating their importance in concrete?	CO1	2	8
	b).	Explain the classification and gradation of aggregates?	CO1	2	7
		UNIT - II			
3.	a).	What is Workability? State varis tests on Workability and explain any two tests in detail.	CO2	1	8
	b).	Define the terms Segregation, Bleeding, Creep and Shrinkage of concrete?	CO2	1	7
		OR			
4.	a).	What is NDT testing of concrete? Explain any two NDT tests?	CO2	1	8
	b).	Define Abrams Law and Gel space ratio? State their major differences in determination of concrete strength?	CO2	1	7
		UNIT - III			
5.	a).	Differentiate high strength concrete from high performance concrete?	CO3	4	8
	b).	Explain the requirements and properties of high performance concrete?	CO3	5	7
		OR			
6.	a).	Explain the design procedure of HSC Using ErintroyShaklok method?	CO3	5	8
	b).	Explain briefly abt ultra -high strength concrete?	CO3	5	7
		UNIT - IV			
7.	a).	Design the concrete mix for M25 grade of concrete for the following data using DOE method a. Compressive strength for 28 days = 25 N/mm ² b. Standard deviation = 4 N/mm ² c. Nominal cover to steel reinforcement = 30mm d. Maximum size of Coarse Aggregates = 20mm e. Aggregates are Uncrushed type f. Degree of workability, Slump = 60mm g. Type of exposure : Moderate h. Cement : Sulphate Resisting Portland Cement (specific gravity - 3.15) i. Specific gravity of Fine aggregate and Coarse aggregate = 2.7	CO4	6	8

		j. Fine aggregate is confined to Zone: II of Table 4: IS 383-1970 k. Coarse Aggregates: 20mm MSA (78%) & 10mm MSA (22%)			
	b).	Explain the step wise Procedure for IS mix design in detail?	CO4	5	7
		OR			
8.	a).	What is polymer concrete? Explain its types?	CO4	1	8
	b).	State the importance of FRC over conventional concrete?	CO4	1	7
		UNIT - V			
9.	a).	What is a form work? Explain its importance in construction?	CO3	1	8
	b).	List various connections in form work and explain with neat sketches?	CO3	5	7
		OR			
10.	a).	State and explain different form works?	CO3	2	8
	b).	Explain the design of form work?	CO3	5	7

CO: Course Outcome

KL: Knowledge Level

M: Marks

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