Course Code: 2050141 **Roll No:** **MLRS-R20**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

III B.Tech I Sem Regular End Examination, December 2022

Concrete Technology

(Civil)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1.	a)	Define Cement.	2M	CO1	BL1
	b)	List out various types of cements based on characteristic compressive strength of cement at age of 28 days.	2M	CO1	BL1
	c)	What is meant by surface texture of aggregate?	2M	CO2	BL1
	d)	Explain briefly about bulking of sand?	2M	CO2	BL2
	e)	Summarize the qualities of water used in concreting.	2M	CO3	BL2
	f)	Outline the various test available in Indian standards for measuring fresh concrete workability properties.	2M	CO3	BL2
	g)	What is meant by Gel-Space Ratio?	2M	CO4	BL1
	h)	Discover the relation between Compression strength and flexural strength according to Indian Standards.	2M	CO4	BL5
	i)	Justify the impact of w/c ratio on durability of concrete.	2M	CO5	BL5
	j)	Would you explain Cellular Concrete?	2M	CO5	BL4

PART- B

(10*5 Marks = 50 Marks)

2	a)	What is hydration of cement and explain the influences of Bogue's compounds.	5M	CO1	BL4
	b)	Explain the testing procedure of finding out the fineness character of cement.	5M	CO1	BL4
		OR			
3	a)	List out various types of chemical admixtures available as per Indian standards and explain functioning of any two of them.	5M	CO1	BL2
	b)	Explain the testing procedure of finding out the specific gravity character of cement.	5M	CO1	BL4
4	a)	Write the laboratory procedure to determine Fineness Modulus of Coarse Aggregate?	5M	CO2	BL1
	b)	Distinguish the characteristics of Natural Sand and Manufactured Sand.	5M	CO2	BL2
		OR			

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5	a)	How is gap grading noticed on a grading curve? Explain Briefly.	5M	CO2	BL4
	b)	Explain the influence of shape of the aggregates on properties of Fresh Concrete.	5M	CO2	BL4
6	a)	Compare segregation and bleeding in concrete.	5M	CO3	BL2
	b)	Analyze the factors effecting workability of fresh concrete.	5M	CO3	BL4
		OR			
7		List out various types of concrete mixing methodologies and Explain any two of them in brief.	10M	CO3	BL4
8	a)	List different types of shrinkage. What are the factors affecting shrinkage	5M	CO4	BL1
	b)	Elaborate the Non Destructive testing procedure to find the homogeneity of hardened concrete by using Ultrasonic Pulse Velocity Apparatus with neat sketches.	5M	CO4	BL5
		OR			
9	a)	Explain the procedure of determination of modulus of elasticity of concrete	5M	CO4	BL4
	b)	With the help of neat sketches, Explain any Two types of Concrete Curing methods.	5M	CO4	BL4
10	a)	Develop the design steps of a mix design by IS code method.	5M	CO5	BL6
	b)	Distinguish between High performance concrete and High density concrete.	5M	CO5	BL2
		OR			
11		Design a concrete mix of M25 grade. Take standard deviation of 4MPa. The specific gravities of coarse aggregate and fine aggregate are 2.72 and 2.60 respectively. The bulk density of coarse aggregate is 1610 kg/m3 and fineness modulus of aggregate is 2.74.A slump of 60mm is necessary The water absorption of coarse aggregate is 1% and free moisture in fine aggregate is 2% .Design the concrete mix using IS code method. Assume any missing data as per standards.	10M	CO5	BL6

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CO - Course Outcome **BL - Blooms Taxonomy Levels**