

Code: 23CE3401

II B.Tech - II Semester – Regular Examinations - MAY 2025**CONCRETE TECHNOLOGY
(CIVIL ENGINEERING)****Duration: 3 hours****Max. Marks: 70**

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level**CO – Course Outcome**

PART – A

		BL	CO
1.a)	What are the factors influencing the setting of cement?	L2	CO1
1.b)	Mention the different grades of cement.	L3	CO1
1.c)	What is the significance of compaction in fresh concrete?	L2	CO2
1.d)	What is segregation in concrete, and how does it affect quality?	L3	CO2
1.e)	What is gel/space ratio?	L2	CO3
1.f)	List out non-destructive methods of concrete.	L2	CO3
1.g)	How is the dynamic modulus of elasticity different from the static modulus of elasticity?	L3	CO4
1.h)	What are the effects of creep on concrete structures?	L2	CO4
1.i)	What is ready-mixed concrete, and how is it different from site-mixed concrete?	L2	CO5
1.j)	List different types of fibers used in fiber-reinforced concrete.	L2	CO5

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	Discuss the chemical composition of Portland cement and explain its impact on the properties of cement.	L2	CO1	10 M	
OR					
3	What are the roles of fly ash and silica fume as supplementary cementing materials in concrete? How do they improve the performance of concrete?	L2	CO1	10 M	
UNIT-II					
4	What is workability in fresh concrete? Explain the factors that influence workability and their significance in concrete production.	L2	CO2	10 M	
OR					
5	Describe the process of shotcrete application. What are its benefits, and where is it commonly used in construction projects?	L3	CO5	10 M	
UNIT-III					
6	What is the flexure test for hardened concrete? Discuss the test procedure and its significance in evaluating the bending strength of concrete.	L2	CO2	10 M	
OR					

7	Discuss the role of curing in the strength development of hardened concrete. What are the effects of improper curing on concrete strength and durability?	L2	CO3	10 M
UNIT-IV				
8	Explain types of shrinkage.	L3	CO4	10 M
OR				
9	Discuss how creep can affect the serviceability and long-term performance of concrete elements.	L2	CO4	10 M
UNIT-V				
10	Explain the process of quality control in concrete. Why is quality control essential in ensuring the desired properties and consistency of the final concrete mix?	L3	CO3	10 M
OR				
11	Illustrate mix proportioning of M35 grade of concrete as per IS code specifications.	L2	CO2	10 M