



B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Sixth Semester

CIVIL ENGINEERING

U18CEE0001: Concrete Technology

COURSE OUTCOMES

- CO1:** Understand the properties of various Ingredients of concrete.
CO2: Select suitable admixture for concrete with special properties.
CO3: Design the concrete mix for the required strength as per BIS guidelines.
CO4: Understand tests for fresh and hardened properties of concrete.
CO5: Understand special type of concrete for the given requirement.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|-------------------|
| 1. Comment on the 'fineness' of cement. | CO1 | [K ₁] |
| 2. State the importance of the quality of water used for concreting. | CO1 | [K ₂] |
| 3. Compare plasticizers and superplasticizers. | CO2 | [K ₂] |
| 4. Recall the role of retarders in concrete. | CO2 | [K ₁] |
| 5. Define Mix Design. | CO3 | [K ₁] |
| 6. List the factors that affect the creep of concrete. | CO3 | [K ₂] |
| 7. What is meant by bleeding of concrete? | CO4 | [K ₂] |
| 8. Tell the properties affecting workability of concrete. | CO4 | [K ₁] |
| 9. State the applications of Geo polymer concrete. | CO5 | [K ₂] |
| 10. Why is it better to use ready mixed concrete than site mixed concrete? | CO5 | [K ₁] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|---|---|-----|-------------------|
| 11. a) Explain in details the different tests employed for cement to ascertain its quality as per IS specification. | 8 | CO1 | [K ₃] |
| b) What are the effects of the shape and texture of aggregates on the strength and workability of concrete? | 8 | CO1 | [K ₄] |
| 12. a) Discuss briefly the role of admixture in concrete. | 8 | CO2 | [K ₃] |

	b)	Explain the various types of mineral admixtures.	8	CO2	[K ₄]
13.	a)	Explain in detail, the step by step procedure of IS method of Concrete mix design.	8	CO3	[K ₄]
	b)	Discuss the various methods of proportioning.	8	CO3	[K ₃]
14.	a)	Describe the importance of curing. When should it be commenced? For how long should it be continued?	8	CO4	[K ₅]
	b)	Define the term workability. What are the various tests conducted to determine the Workability of concrete and explain them.	8	CO4	[K ₄]
15.	a)	Discuss the importance and effects of water absorption and moisture content of lightweight aggregate concrete.	8	CO5	[K ₄]
	b)	What special features are to be considered while handling and placing ready mixed concrete?	8	CO5	[K ₃]
16.	a)	Design the concrete mix for grade M30 with suitable conditions. Find the quantities of the constituents of the mix for a bag of cement. Assume the necessary data suitably.	8	CO3	[K ₅]
	b)	What is hardened concrete? Mention the factors influence its Strength.	8	CO4	[K ₃]
