



B.E DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Sixth Semester

CIVIL ENGINEERING

U18CEE0001: Concrete Technology

(Use of IS 10262 & IS 456 codes is permitted)

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. List the types of cement. | CO1 | [K ₁] |
| 2. Outline the quality of water used for concreting. | CO1 | [K ₁] |
| 3. List the advantages of superplasticizers. | CO2 | [K ₂] |
| 4. Summarize the applications of Ground Granulated Blast Furnace Slag. | CO2 | [K ₂] |
| 5. Enumerate the advantages of concrete mix design. | CO3 | [K ₂] |
| 6. List the factors influencing mix design. | CO3 | [K ₂] |
| 7. Calculate the flexural strength of concrete beam of grade M40 as per IS guidelines. | CO4 | [K ₂] |
| 8. Explain the ways to reduce bleeding of concrete. | CO4 | [K ₂] |
| 9. Under what situations a concrete mix is classified as self-compacting concrete? | CO5 | [K ₂] |
| 10. List the advantages of geopolymer concrete. | CO5 | [K ₂] |

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 detail the test to determine the initial setting time of ordinary Portland cement. | 8 | CO1 | [K ₂] |
| | b) | Explain any two tests done on aggregates with suitable sketches. | 8 | CO1 | [K ₂] |
| 12. | a) | Outline the effects of Copper slag and Fly ash on concrete properties. | 8 | CO2 | [K ₂] |
| | b) | Compare accelerators and retarders. | 8 | CO2 | [K ₂] |
| 13. | | Design a concrete mix of grade M35 as per IS method of mix design. Assume all data required. | 16 | CO3 | [K ₃] |
| 14. | a) | Define workability. Explain Slump test to determine workability of fresh concrete. | 8 | CO4 | [K ₂] |
| | b) | Explain the procedure to determine the Young's Modulus of elasticity for concrete with a neat sketch. | 8 | CO4 | [K ₂] |
| 15. | a) | Explain High strength concrete in detail. | 8 | CO5 | [K ₂] |
| | b) | Summarize the various factors affecting properties of fibre reinforced concrete. | 8 | CO5 | [K ₂] |
| 16. | a) | List and explain the various types of mixes. | 8 | CO5 | [K ₂] |
| | b) | Explain any two types of cement in detail. | 8 | CO1 | [K ₂] |
