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Question Paper Code	12516
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

Civil Engineering

20CEPC304 - CONSTRUCTION MATERIALS EQUIPMENT AND PRACTICES

(Use of IS 10262:2009 Code Book for Concrete Mix Design is permitted)

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---------------------------------------------------------------------------------------------|-------------------------------|
| 1. What are the various reasons for deterioration of stones? | 2,K1,CO1 |
| 2. What are the uses of bricks? | 2,K1,CO1 |
| 3. What is meant by Grade C-43 cement? What are the main active cementing compounds in OPC? | 2,K2,CO2 |
| 4. What is grading of aggregates? | 2,K1,CO2 |
| 5. List the various types of special concrete. | 2,K1,CO3 |
| 6. Classify the factors influencing the choice of mix design. | 2,K2,CO4 |
| 7. List the constituents of Glass. | 2,K1,CO5 |
| 8. What are composite materials? | 2,K1,CO5 |
| 9. What are slipforms? | 2,K1,CO6 |
| 10. List the importance of providing DPC in buildings. | 2,K1,CO6 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

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|------------------------------------------------------------------------|-----------|
| 11. a) Explain | |
| (i) Slaking process of lime. | 3,K2,CO1 |
| (ii) Dressing of stones. | 3,K2,CO1 |
| (iii) Classification of bricks. | 7,K2,CO1 |
| OR | |
| b) Explain the tests conducted on bricks. | 13,K2,CO1 |
| 12. a) Summarize the procedure of manufacturing cement by dry process. | 13,K2,CO2 |
| OR | |
| b) Explain the following | |
| (i) Water absorption tests on aggregate. | 7,K2,CO2 |
| (ii) Flakiness Index and Elongation Index. | 6,K2,CO2 |

13. a) Illustrate the tests on fresh concrete. *13,K2,CO3*
- OR**
- b) List the benefits of RMC and also write a short note on Ready Mix Concrete. *13,K2,CO3*
14. a) Summarize the process of manufacturing of Glass. What are the Uses of glass in construction industry? *13,K2,CO5*
- OR**
- b) Illustrate the various defects in timber with neat sketches. *13,K2,CO5*
15. a) Classify the types of flooring. Explain any 5 in detail with sketches. *13,K2,CO6*
- OR**
- b) Describe the procedure involved in underwater construction of diaphragm walls and basement. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Solve the concrete mix design and arrive at the mix proportion for M20 concrete as per BIS method for various parameters. Assume suitable data. *15,K3,CO4*
- OR**
- b) Explain the step by step procedure for arriving the BIS method of concrete mix design. *15,K2,CO4*