

CBCS SCHEME



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17CV/CT44

Fourth Semester B.E. Degree Examination, Aug./Sept.2020 Concrete Technology

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use of IS – 10262 mix design code is allowed.

Module-1

- 1 a. Define cement. Tabulates the oxides content. (04 Marks)
- b. Explain the sulphate resisting cement and Portland slag cement. (06 Marks)
- c. Explain the particle size distribution test of sand. (04 Marks)
- d. Explain the tests flakiness and elongation index for coarse aggregate. (06 Marks)

OR

- 2 a. Explain the manufacture of cement in dry process by flow chart. (05 Marks)
- b. Mention the field tests on cement. (05 Marks)
- c. Explain the tests specific gravity and crushing value for coarse aggregate. (06 Marks)
- d. What are the factor affects on size, shape and texture of aggregate. (04 Marks)

Module-2

- 3 a. Name the tests conducted on workability of concrete and explain any one test. (08 Marks)
- b. Explain the process of manufacturing of concrete with flow charts. (12 Marks)

OR

- 4 a. What are the factors affecting workability. (08 Marks)
- b. What is segregation and bleeding? How prevent in the concrete mix. (12 Marks)

Module-3

- 5 a. What is shrinkage of concrete? Explain drying shrinkage. (08 Marks)
- b. Explain the penetration test according to IS456 codal provision. (04 Marks)
- c. What are the factors improves the durability of concrete. (08 Marks)

OR

- 6 a. Define creep, what are the factors affecting the creep of concrete. (10 Marks)
- b. Explain maturity concept. (04 Marks)
- c. Explain the testing of hardened concrete. (06 Marks)

Module-4

- 7 a. Write a step by step procedure for concrete mix design according to IS code provision. (06 Marks)
- b. Design a M30 grade concrete mix having a specific gravity of fine aggregate is 2.62 and grading zone I. Use IS : 10262 Indian standard recommended guidelines. Assume all other data suitable. (14 Marks)



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OR

- 8 a. What are the data require for mix proportioning of concrete. (04 Marks)
b. Design a concrete mix design for a M40 grade using GGBS according to IS – 10262 code provision. Use following data :
- a) Type of cement – OPC 43 grade
 - b) Type of mineral admixture – GGBS
 - c) Maximum nominal size of A99 – 20mm
 - d) Exposure condition – Severe
 - e) Workability – 120mm (slump)
 - f) Method of concrete placing – Pumping
 - g) Degree of supervision – Good
 - h) Maximum cement – As per IS 456
 - i) Type of aggregate – Crushed stone angular aggregate
 - j) Chemical admixture type – Super plasticizer
- Assume other data wherever necessary. (16 Marks)

Module-5

- 9 a. Explain the property of light weight concrete. (06 Marks)
b. What are the different types of fibers used in FRC? (08 Marks)
c. What are the factors on which property of RMC depends? (06 Marks)

OR

- 10 a. What are the properties of FRC? (04 Marks)
b. Name the different test conducted on self compacting concrete and explain any four. (12 Marks)
c. Write the application of light weight concrete mix. (04 Marks)
