



# 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)

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