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Fourth Semester B.E. Degree Examination, Feb./Mar. 2022 Concrete Technology

Time: 3 hrs.

Max. Marks: 100

Note : 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use Code book IS 10262 – 2019 for Mix design problem [Module – 4].

Module-1

- 1 a. Explain the manufacturing process of cement by dry process along with flow chart. (10 Marks)
b. Explain the importance of size, shapes and texture of Aggregate. (10 Marks)

OR

- 2 a. List the type of cement and briefly explain the properties and application of any four type of Cement. (10 Marks)
b. Explain the importance of plasticizers and fly ash as admixture in concrete. (10 Marks)

Module-2

- 3 a. List the different methods of binding workability of concrete. Explain any one method in detail. (10 Marks)
b. What are the methods of Transportation and placing of concrete used for making good quality concrete? Explain in brief. (10 Marks)

OR

- 4 a. Explain the Ill – effects of Segregation and bleeding in concrete. (10 Marks)
b. List and explain factors affecting workability of concrete in details. (10 Marks)

Module-3

- 5 a. Write the process of dis – integration of concrete due to Acid attack. Suggest the remedial measure to control Sulphate Attack. (10 Marks)
b. Write short note on :
i) Shrinkage of concrete ii) Creep. (10 Marks)

OR

- 6 a. What is Durability of Concrete? Explain the factors affecting durability of concrete. (10 Marks)
b. Mention various Non – destructive testing of concrete. Explain any one method briefly. (10 Marks)

Module-4

- 7 Design a concrete mix for M25 :
a. Grade of designation : M25.
b. Type of cement : OPC 43 grade.
c. Max. Nominal size of Aggregate = 20mm.
d. Min. Cement content = 300 kg/m³.
e. Water cement ratio : 0.50

- f. Workability : 75mm slump.
- g. Exposure condition : Moderate (RCC).
- h. Max. Cement content : 450kg/m³.
- i. Chemical Admixture : NIL.
- j. Fine Aggregate zone : Zone 2.
- k. Specific gravity of cement : 3.15.
- l. Coarse Aggregate : Specific gravity : 2.80.
- m. Coarse Aggregate : Water absorption : 1%.
- n. Fine Aggregate : Specific gravity : 2.65.
- o. Fine Aggregate : Water absorption : 2%.

(20 Marks)

OR

- 8 Illustrate the steps to be followed as per IS recommendation method for mix design (step by step procedure) IS 10262 – 2019. (20 Marks)

Module-5

- 9 a. Briefly explain the properties of FRC. State the practical application of the same. (10 Marks)
b. What is RMC? How is it Manufactured? Explain briefly. (10 Marks)

OR

- 10 a. List the different tests on SCC. Explain any one in detail. (10 Marks)
b. State advantages and disadvantages and application of Light Weight Concrete. (10 Marks)
