CBCS SCHEME

USN | | | | | | | | | | |

17CV44

Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Concrete Technology

Time: 3 hrs. Max. Marks: 100

Note: ***1. Answer any FIVE full questions, choosing ONE full question from each module.***
2. Use 10262 – 2019 is permitted.
3. Missing data, if any, may be suitably assumed.

Module-1

1 a. Explain the method of manufacture of ordinary Portland cement with the help of flow chart. **(10 Marks)**

b. Explain the importance of shape, size and texture of coarse aggregate. **(10 Marks)**

OR

2 a. List various physical test conducted on cement in the laboratory. Explain any two tests briefly with BIS specification. **(10 Marks)**

b. Explain the importance of chemical and mineral admixtures in concrete. **(10 Marks)**

Module-2

3 a. List the factors that affect workability of concrete. Mention the laboratory tests conducted to measure workability of concrete sample. Explain array one. **(10 Marks)**

b. Explain the segregation and bleeding in concrete. **(10 Marks)**

OR

4 a. Explain the necessity of curing and explain different method of curing. **(10 Marks)**

b. Explain the process of manufacturing of concrete. **(10 Marks)**

Module-3

5 a. Discuss the various factors which affect the strength of concrete. **(10 Marks)**

b. Explain the significance of durability of concrete. Explain the various factors which affects the durability. **(10 Marks)**

OR

6 a. List various NDT tests. Mention the principle and limitations of UPVT test. **(10 Marks)**

b. Explain briefly :
i) Sulphate attack
ii) Freezing and thawing
iii) Collaboration. **(10 Marks)**

Module-4

7 Explain the concept of MIX design pertaining to concrete. Illustrate the steps to be followed as per IS recommdations method for a mix design. **(20 Marks)**

OR

8 Design a concrete mix M_{20} with the following data use IS method (IS 10262 – 2019). Maximum size of aggregate : 20, Slump required = 100mm, Quality control : good exposure condition = mild, 53 grade OPC having specific gravity = 3.15, Sp gravity of fine aggregate and course aggregate = 2.55 and 2.70 respectively. Fine aggregate confirming to zone – II, water absorption = 0.5% and 1.0% for coarse and fine aggregate respectively. **(20 Marks)**

Module-5

9 a. Define ready mix concrete. Explain manufacturing advantages and disadvantages own insitu concrete. **(10 Marks)**

b. Explain the properties of fibre reinforced concrete state the principal application. **(10 Marks)**

OR

10 Explain any four of the following :

a. Light weight concrete
b. Ready mix concrete
c. Fiber reinforced concrete applications
d. Self compacting concrete.
e. Types of fibers used in FRC. **(20 Marks)**

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