CBCS SCHEME

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

18CV44

Fourth Semester B.E. Degree Examination, July/August 2022
Concrete Technology

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Mention different types of cement. **(10 Marks)**

b. Explain the following :
i) Fly ash ii) Silico Fumes iii) Rice husk ash iv) GGBS. **(10 Marks)**

OR

2 a. Explain the constituents of cement with their percentages functioning. **(10 Marks)**

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

Module-2

3 a. List and explain the factors affects the workability of concrete. **(10 Marks)**

b. Enumerate good and bad practices of making and using of Fresh concrete. **(10 Marks)**

OR

4 a. Explain the process of hydration of cement. Enumerate its significance and the chemical reaction. **(10 Marks)**

b. Write short notes :
i) Segregation ii) Membrane curing. **(10 Marks)**

Module-3

5 a. Explain the factors affecting the strength of concrete. **(10 Marks)**

b. What is the Necessity of Non Distractive Testing (NDT)? Explain any two methods of NDT. **(10 Marks)**

OR

6 a. Mention the types of Shrinkage. Explain factor affecting Shrinkage. **(10 Marks)**

b. Explain Sulphate attack and chloride attack. **(10 Marks)**

Module-4

7 a. What are the objectives of mix design? Explain the factors to be considered for mix design. **(10 Marks)**

b. Mention different method of mix design; explain the factor affecting the choice of mix proportions. **(10 Marks)**

OR

8 Design a concrete mix of M_{25} grade as per IS 10262-2019, with the following stipulations.

a) Grade designation – M_{25}
b) Type of cement OPC 43 grade
c) Maximum Nominal size of aggregate 20mm down
d) Minimum cement content : 300 Kg/m^3
e) Workability : Slump : 75mm
f) Exposure condition : moderate
g) Method of concrete placing : Manual
h) Maximum cement content : 450Kg/m^3
i) Chemical admixture : NIL
j) Fine aggregate zone : zone 2

A. Specific gravity of cement : 3.15

B. Coarse aggregate
(i) Specific gravity 2.80
(ii) Water absorption 1%
(iii) Free surface moisture content : NIL

C. Fine aggregate
(i) Specific gravity 2.65
(ii) Water absorption 2%
(iii) Free surface moisture contact : 2% **(20 Marks)**

Module-5

9 a. Enumerate the necessity of RMC with advantages and disadvantages. **(10 Marks)**

b. Write short notes on :
(i) Geopolymer concrete
(ii) High performance concrete. **(10 Marks)**

OR

10 a. List the types of Fibres used in FRC and discuss factors affecting properties of FRC. **(10 Marks)**

b. What is self compacting concrete? Explain the properties of SCC. **(10 Marks)**

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