

**III B. Tech I Semester Supplementary Examinations, DEC/JAN -2022-23****CONCRETE TECHNOLOGY**

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

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**UNIT-I**

- 1 a) What are the different types of chemical admixtures used in concrete? [8M]  
b) What is the purpose of using plasticizers in concrete? [7M]  
(OR)
- 2 a) Discuss about the physical properties of cement. [8M]  
b) Describe how bulking of fine aggregates takes place and how it is taken care of in the field. [7M]

**UNIT-II**

- 3 Design M20 grade concrete for the following data [15M]  
Maximum size of C.A = 20mm (angular)  
Grade of cement = 53  
Workability = 40mm slump  
Type of exposure = Mild  
Specific gravity of cement = 3.15  
Specific gravity of C.A = 2.6  
Specific gravity of F.A = 2.6  
Water absorption of CA = 0.5%  
Water absorption of FA = 1%  
Sand is conforming to Zone II  
(OR)
- 4 a) What are the common terminologies used in statistical quality control of concrete [8M]  
b) What is the significance of bleeding in construction, when the concreting is done in several lifts? [7M]

**UNIT-III**

5. a) Compare the differences between semi-destructive and non-destructive testing methods. [8M]  
b) How do you determine the splitting strength of concrete? [7M]  
(OR)
- 6 a) State Abram's law & Explain how do Feret improve Abram's law. [8M]  
b) Why the compressive strength is an important property of concrete discuss the factors that affect the compressive strength. [7M]

**UNIT-IV**

- 7 a) What do you understand by creep, shrinkage of concrete? [8M]  
b) Differentiate between static modulus and dynamic modulus. [7M]  
(OR)
- 8 a) Explain the parameters affecting the shrinkage of concrete. [8M]  
b) Explain the parameters affecting the creep of the concrete. [7M]

