

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech. III Year II Semester Regular & Supplementary Examinations June-2025**  
**CONCRETE TECHNOLOGY**

(Civil Engineering)

**Time: 3 Hours**

**Max. Marks: 60**

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 What are Bogue's compounds? Explain in detail how each one of these compounds influences the strength and setting properties of cement. CO1 L1 12M

**OR**

- 2 List the physical properties of aggregates. Explain any two properties. CO1 L2 12M

**UNIT-II**

- 3 What are the various factors affecting the compressive strength of concrete? CO2 L2 12M

**OR**

- 4 Explain the procedure for compression test of hardened concrete. CO2 L2 12M

**UNIT-III**

- 5 a What is shrinkage of concrete? CO3 L2 6M  
b Explain the various factors affecting shrinkage of concrete. CO3 L2 6M

**OR**

- 6 Explain the procedure for UPV and Rebound hammer test. CO4 L2 12M

**UNIT-IV**

- 7 Which are all the effects of Sulphate attack on concrete? Explain briefly. CO5 L2 12M

**OR**

- 8 Explain briefly about chloride attack on concrete. CO5 L2 12M

**UNIT-V**

- 9 Design a concrete mix of M20 grade for a roof slab. Take a standard deviation of 4MPa. The specific gravities of Coarse Aggregate and Fine Aggregate are 2.67 and 2.73 respectively. The bulk density of coarse aggregate is 16020 Kg/m<sup>3</sup> and Fineness Modulus of Fine Aggregate is 2.76. A slump of 50mm is necessary. The water absorption of coarse aggregate is 1% and free moisture in fine aggregate is 3%. Design the concrete mix using ACI method. Assume any missing data suitably. CO6 L3 12M

**OR**

- 10 What are the factors considered in Mix Proportions? Explain Briefly. CO6 L1 12M

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