O.P.Code: 20CE0139	R20	H.T.No.									

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

B.Tech III Year II Semester Regular Examinations August-2023

CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 Hours **Max. Marks: 60**

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

UNIT-I

1		Briefly write the significance of following properties: Specific gravity, Bulk Density, Porosity and Absorption & Moisture Content of Aggregate.	CO1	L1	12M
		OR			
2	a	Discuss about the chemical composition of Ordinary Portland cement.	CO1	L2	6M
	b	What do you mean by soundness of aggregate? Explain.	CO1	L1	6M

UNIT-II

3		Explain the various factors affecting strength of hardened concrete.	CO2	L2	12M
		OR			
4	a	Explain the Maturity concept for strength development of concrete.	CO2	L2	6M
	b	Shortly explain about Gel space ratio.	CO2	L2	6M

UNIT-III

5		Explain the procedure to conduct Modulus of elasticity test in the laboratory and explain the various factors affecting the modulus of elasticity.	CO3	L2	12M
		OR			
6		Explain Creep of concrete and relation between creep and time.	CO3	L2	12M

UNIT-IV

7		What are the methods of controlling sulphate attack, Explain Briefly.	CO4	L2	12M
		OR			
8		Write and explain the effects of materials on durability.	CO4	L2	12M

UNIT-V

9		Design a M35 concrete mix using IS method of Mix Design for the following data: i) Maximum size of aggregate - 20mm (Angular) ii) Degree of workability - 0.90 compaction factor. iii) Quality control - good iv) Type of exposure - mild v) Specific Gravity A. Cement - 3.12 B. Sand - 2.63 C. Coarse aggregate - 2.666 vi) Water absorption: A. Coarse aggregate - 0.5% B. Fine aggregate - 1.0% vii) Free surface moisture: A. Coarse aggregate - Nil B. Fine aggregate - 2.2% viii) Sand confirms to Zone I grading. Assume any other data required suitably.	CO5	L3	12M
		OR			
10		Explain the mix design procedure of concrete as per IS code Method.	CO5	L2	12M

***** END *****