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Reg. No: ☐☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations July-2022
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours   Max. Marks: 60

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

UNIT-I

1	a	Discuss the chemical composition of Ordinary Portland cement.	L1	6M
	b	Briefly explain different types of cement.	L2	6M

OR

2	a	What do you mean by soundness of aggregate?	L1	6M
	b	Draw the flow diagrams for wet and dry process of manufacture of cement and explain the same.	L2	6M

UNIT-II

3	a	Explain the Maturity concept for strength development of concrete.	L1	6M
	b	Explain the relation between compression strength and tensile strength of concrete.	L2	6M

OR

4	a	Briefly explain manufacturing procedure of concrete.	L2	6M
	b	Explain about different methods to measure workability of concrete?	L2	6M

UNIT-III

5	a	Draw the typical stress-strain curve of concrete and explain the various modulus of elasticity.	L3	6M
	b	Explain the various factors affecting shrinkage of concrete.	L2	6M

OR

6	a	How the shrinkage of concrete is classified and explain each one of them briefly?	L3	6M
	b	What are the various factors affecting the compressive strength of concrete?	L1	6M

UNIT-IV

7	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/m3 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.	L4	12M

OR

8	a	Brief explain about factors affecting choice of mix design.	L4	6M
	b	Explain quality control of concrete and durability of concrete.	L4	6M

UNIT-V

9	a	What are various factors affecting properties of Fibre Reinforced concrete?	L1	6M
	b	Write applications of Fibre Reinforced concrete.	L2	6M

OR

10	a	Explain self-healing concrete and bacterial concrete.	L2	6M
	b	What is self-consolidating concrete? What are the materials used for SCC?	L2	6M

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