

Reg. No:

--	--	--	--	--	--	--	--	--	--

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations December-2021
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- | | | | |
|---|---|----|----|
| 1 | a Explain the term super plasticizers. How are they useful in concrete production? | L1 | 6M |
| | b Explain the advantages of using plasticizers and super plasticizers in concrete making. | L2 | 6M |

OR

- | | | | |
|---|---|----|----|
| 2 | a Discuss the chemical composition of Ordinary Portland cement. | L1 | 6M |
| | b Briefly explain different types of cement. | L2 | 6M |

UNIT-II

- | | | | |
|---|--|----|----|
| 3 | a Explain different methods of placing concrete. | L2 | 6M |
| | b Explain different methods of curing procedure. | L2 | 6M |

OR

- | | | | |
|---|--|----|----|
| 4 | a What do you understand by the term "Workability"? | L1 | 6M |
| | b Discuss the various factors affecting the workability of concrete. | L2 | 6M |

UNIT-III

- | | | | |
|---|--|----|----|
| 5 | a What are the factors that affect the creep and shrinkage of concrete? | L1 | 6M |
| | b How does strength of concrete influence the modulus of elasticity and Poisson's ratio of concrete? | L3 | 6M |

OR

- | | | | |
|---|--|----|----|
| 6 | a Explain the various pulse velocity methods and the techniques measuring the pulse velocity through concrete. | L2 | 6M |
| | b Explain Schmidt's Rebound Hammer test and the limitations and applications of the same. | L3 | 6M |

UNIT-IV

- | | | | |
|---|--|----|----|
| 7 | a Define the term "Mix Design of Concrete" and explain its significance. | L4 | 6M |
| | b Briefly discuss various methods of the mix design available in literature. | L4 | 6M |

OR

- | | | | |
|---|---|----|-----|
| 8 | a Design a M40 concrete mix using IS method of Mix Design for the following data: | L4 | 12M |
| | 1) Maximum size of aggregate - 20mm (Angular). | | |
| | 2) Degree of workability - 0.90 compaction factor. | | |
| | 3) Quality control - good | | |
| | 4) Type of exposure - severe | | |
| | 5) Specific Gravity: A. Cement - 3.15 B. Sand - 2.68 C. Coarse aggregate - 2.71 | | |
| | 6) Water absorption: A. Coarse aggregate -1.0% B. Fine aggregate - 2.0% | | |
| | 7) Free surface moisture: A. Coarse aggregate- Nil B. Fine aggregate- 2.0% | | |
| | 8) Sand confirms to zone III grading. | | |
| | Assume any other data required suitably | | |

UNIT-V

- 9 a What are different types of fibres used in the production of Fibre Reinforced concrete? **L1 6M**
- b With respect Fibre Reinforced concrete explain following terms. **L2 6M**
i) Aspect ratio ii) Percentage volume of fibre
- OR**
- 10 a Explain polymer concrete? **L2 6M**
- b Explain types of polymer concrete? **L2 6M**

*** END ***