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

B.Tech III Year I Semester Supplementary Examinations Feb-2021

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. 6M
b Briefly explain different types of cement. 6M

OR

- 2 a Discuss the difference between the wet and dry process of manufacturing of Portland cement. 6M
b Draw the flow diagrams for wet and dry process of manufacture of cement and explain the same. 6M

UNIT-II

- 3 a What do you understand by the term workability? 8M
b Discuss the various factors affecting the workability of concrete. 4M

OR

- 4 a Explain different methods of placing concrete. 7M
b Explain different methods of curing procedure. 5M

UNIT-III

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

OR

- 6 a How the shrinkage of concrete is classified and explain each one of them briefly? 5M
b Explain the procedure to conduct modulus of elasticity test in the laboratory and explain the various factors affecting the modulus of elasticity. 7M

UNIT-IV

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

OR

- 8 Design a M30 concrete mix using IS method of Mix Design for the following data: 12M
- i. Maximum size of aggregate - 20mm (Angular).
 - ii. Degree of workability - 0.90 compaction factor.
 - iii. Quality control - good
 - iv. Type of exposure - severe
 - v. Specific Gravity: A. Cement - 3.10 B. Sand- 2.68 C. Coarse aggregate - 2.69
 - vi. Water absorption: A. Coarse aggregate-1.0% B. Fine aggregate - 2.0%
 - vii. Free surface moisture: A. Coarse aggregate- Nil B. Fine aggregate- 2.0%
 - viii. Sand conforms 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? 6M
b With respect fibre reinforced concrete explain following terms. 6M
i) Aspect ratio. ii) Percentage volume of fibre.
- OR**
- 10 a Explain polymer concrete. 6M
b Explain types of polymer concrete. 6M

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