CE 312 (R-20)

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III/IV B. Tech. DEGREE EXAMINATIONS, DECEMBER - 2022

First Semester

CIVIL ENGINEERING

DESIGN OF CONCRETE STRUCTURES - I

Time : **Three Hours** Maximum : **60** Marks

Answer ONE question from each Unit.

All questions carry equal marks. 5x12=60 M

UNIT - I

1. What is a balanced section, under reinforced section & over reinforced section ?

(OR)

2. Explain the design of singly and doubly reinforced rectangular beams in working stress condition.

UNIT - II

3. Explain in detail about Doubly reinforced and flanged (T) beams and minimum depth.

(OR)

4. a) Explain in detail I.S. Code provision in Shear and Torsion.
   b) Explain minimum and maximum flexural tension reinforcement in detail.

UNIT - III

5. a) Explain in detail about Slabs with various edge conditions using IS Coefficients.
   b) Explain Deflection in detail in Limit state of serviceability.

(OR)

6. Explain Cracking and IS Code provisions for beams and slabs.

UNIT - IV

7. Explain effective length, braced and un-braced columns in design of compression.

(OR)

8. Explain Cracking and IS Code provisions for beams and slabs.

UNIT - V

9. Explain in detail about uni axial bending moment with neat architecture.

(OR)

10. Define Footing? Explain its types and working procedures with example.