Time : **2** Hours]   [Total Marks : **50**

Instructions : (1)   Attempt All questions.

(2)   Make suitable assumption wherever necessary.

(3)   Figures to the right side indicate full marks.

(4)   IS 456 is permitted

(5)   Calculator is permitted

1   How many loads are considered in R. C. C. Structural design ? **10**
Discuss dead loads and live loads with examples.

2   Draw neat sketch showing reinforcement deatiling of R. C. C.   **10**
Staircase.

3   Design structural elements sizing by approximate method for   **10**
column and footing of a building having height 25 metre and c/c beam
span 5.5 metre. S.B.C. of foundation strata is 250 KN/Sq. mt. Draw
neat Sketches showing all dimensions.

4   Write brief note. (any two)   **10**

(a)   Shallow foundations.

(b)   Ingredients of R.C.C.

(c)   Curing of Concrete

5   Design main steel for a simply supported slab for a school   **10**
    building having 3.25 mt. centre to centre span. Thickness of slab
    130 mm, Concrete M-20, TMT reinforcement steel Fe 500D.
    Also draw bending moment and shear force diagrams.

OR

    Calculate safe load carrying capacity of 300 mm x 600 mm   **10**
    rectangular column, with 8 bars 20 mm dia. Fe-500D and concrete
    M-25.

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