

AMC-11 : DESIGN OF R.C. STRUCTURES

1. DESIGN PHILOSOPHIES

Introduction, Working Stress Method, Ultimate Load Method, Limit State Method, Limit State Method Vs Working Stress Method, Building Code, Accuracy Of Computations, Type Of Construction

2. SINGLY REINFORCED STRUCTURE

Introduction, Bending Of Beams, Cracked Concrete Stage, Ultimate Strength Stage, Assumptions, Moment Of Resistance, Modes Of Failure, Minimum And Maximum Tension Reinforcement, Effective Span

3. DOUBLY REINFORCED SECTIONS

Introduction, Types Of Problem, Stress In Compression Reinforcement, Design Steps, Minimum And Maximum Reinforcement, Design Tables, Flanged Beams, Effective Width Of Flange

4. SHEAR AND DEVELOPMENT LENGTH

Introduction, Shear Stress, Diagonal Tension, Shear Reinforcement, Spacing Of Shear Reinforcement, Development Length, Anchorage Bond, Flexural Bond

5. TORSION

Introduction, torsional stiffness of homogeneous sections, torsional stiffness of r. C. Sections, torsional reinforcement, distribution of torsion reinforcement, torsion in beams curved in plan

6. TYPES OF FLOOR

Introduction, One-Way Slab Systems, Two-Way Slab Systems, Flat Slab Systems, Flat Plate Systems, Grids.

7. COLUMNS AND WALLS

Introduction, effective height of a column, assumptions, minimum eccentricity, short column under axial compression, requirements for reinforcement, columns with helical reinforcement, short columns under axial load and uniaxial bending, construction of design charts, short columns under axial load and biaxial bending, slender columns, walls, construction of design charts, reinforcement in walls, corbels, truss analogy, detailing of reinforcement.

8. TYPES OF STAIRS

Introduction, common types of stairs, central-wall type stairs, central-column type stairs, slabless stairs, helicoidal stairs, free-standing stairs

9. RETAINING OF WALLS

Introduction, forces on retaining walls, stability requirements, proportioning of cantilever walls, development length, loads on the heel, rear counterforts,

10. DESIGN OF TANKS

Roofs, ring beam, floors, walls of rectangular tanks, walls of circular tanks, shear force, steel ladder, base slab, cover to reinforcement, joints, design and detailing of joints, spacing of joints,

11. MASONRY BUILDINGS

Introduction, Brick Wall Design Under Vertical Loads

12. FOUNDATIONS

Introduction, minimum foundation depth., shallow foundations, use of plinth beams, brick wall design under horizontal loads, resistance to earthquake forces by wall boxed in plan, deep foundations
