PART I – Beams and Slabs

1. **Introduction to Reinforced Concrete**
   Properties of concrete and steel, assumptions in RC design
2. **Theory of Reinforced Concrete Beams and Slabs**
   Stress–strain behavior, neutral axis, moment of resistance
3. **Shear and Bond**
   Shear strength, bond stress, anchorage and development length
4. **Torsion in Reinforced Concrete Members**
5. **Doubly Reinforced Beams**
6. **T-Beams and L-Beams**
7. **Design of Reinforced Concrete Beams and Slabs**
8. **Staircases** – Analysis and design
9. **Reinforced Brick and Hollow Tile Roofs**
10. **Two-Way Slabs**
11. **Circular Slabs**
12. **Flat Slabs**

PART II – Compression Members

13. **Axially Loaded Columns**
14. **Columns Subjected to Direct Load and Bending**

PART III – Foundations and Retaining Structures

15. **Spread Footings**
16. **Combined Footings**
17. **Pile Foundations**
18. **Retaining Walls**

PART IV – Special Structures

19. **Domes**
20. **Water Tanks** (rectangular, circular, underground, overhead)
21. **Formwork**
22. **Tests on Cement and Concrete**

PART V – Limit State Design Method

23. **Principles of Limit State Design**
24. **Design of Singly and Doubly Reinforced Sections**
25. **T-Beams and L-Beams (LSD)**
26. **Shear, Bond, and Torsion (LSD)**
27. **Design of Beams and Slabs (LSD)**
28. **Design of Columns (LSD)**
29. **Staircases, Two-Way and Circular Slabs (LSD)**
30. **Yield Line Theory**
31. **Miscellaneous Design Problems**