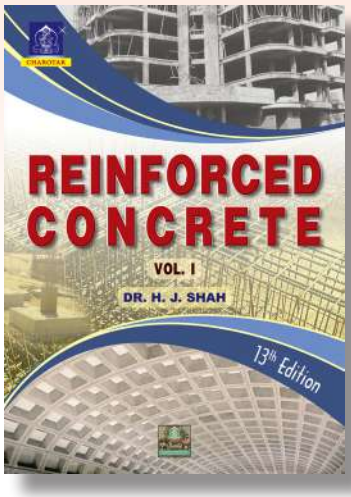
REINFORCED CONCRETE VOL. I



NEW

By
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REVISED & ENLARGED

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ABOUT THE BOOK

This edition is a combined edition of earlier edition published "Reinforced Concrete Vol. I" in two parts i.e., "Reinforced Concrete Vol. I – Part I" and "Reinforced Concrete Vol. I – Part II". This book presents the basic principles involved in Analysis and Design of Reinforced Concrete Structures. Mix design as per latest IS:10262 with excel programs is added. A number of excel programs have been added to clarify the subject matter and design the elements of structure. As per prevailing market conditions the default combination of materials is revised to M20 grade concrete and Fe 500 grade steel, however, the other combinations of materials have not been completely ignored.

The outline of the book is as mentioned below:

Chapter 1 to 3 discuss mainly Concrete Technology. Chapter 1 introduces the subject, while Chapter 2 deals with properties of ingredients of concrete. Chapter 3 deals with properties of wet and set concrete. It explains design mix concrete and presents excel programs to design a concrete mix for standard concretes based on IS:10262-2019. Chapter 4 to 6 discuss fundamentals of flexure design, also discuss working stress method as well as limit state method for flexure design. It designs singly and doubly reinforced rectangular and flanged beams for flexure. Chapter 7 and 8 presents design for Shear and checking for Development Length, Deflection and Cracking. Chapter 9 and 10 deal with the design of Simply Supported and Cantilever Beams and Slabs. Chapter 11 Continuous beams and slabs capable of free rotation at supports are discussed, including redistribution of moments. Chapter 12 and 13 Simple cases of torsion and stairs are discussed. Chapter 14 and 15 Introduce the Load Calculations and Simple designs. Considering the fundamentals developed in earlier chapters, the load calculations on simple structures like Slabs and Beams, capable of free rotation at supports are considered. A few cases are designed in chapter 15. Chapter 16 Designs of Framed Beams are introduced with examples considering it appropriate to discuss with the elements that are not free to rotate at their supports. Chapter 17 contains design of columns used in framed structures. The design interaction diagrams are derived and excel program is prepared for rectangular columns. Chapter 18 emphasis on Design of Foundations: Fundamentals. Moreover this chapter is extensively revised and soil design is sufficiently elaborated. Chapter 19 on Isolated Footings for walls and columns subjected to various types of loads. Discusses topics on axially loaded pad and sloped footing; eccentrically loaded footings; isolated slab and beam type footing; footing for multi-storeyed building columns and also gives an excel program on design of an isolated footing. Chapter 20 discusses Combined Footings for two axially loaded columns and also explains strap, strip and raft foundations. Also includes the guidelines to design a combined footing for general loading system. Chapter 21 elucidates topics on Pile Foundations such as loads on pile groups; soil design of a pile; structural design of a pile; design of a pile cap. Chapter 22 Circular raft foundations with annular and solid rafts used under circular peripheral columns or RCC shafts are discussed. Chapter 23 on Retaining walls includes design of cantilever and counterfort retaining walls. Chapter 24, 25 and 26 deals with variety of roof coverings, viz., Circular, Ribbed and Waffle slabs; Flat slabs and domes are discussed in these chapters. Chapter 27 discusses the empirical designs of both, the deep beams and corbels Chapter 28 Grid or Coffered Floors are designed by using classical analysis. Chapter 29 Formworks: Basic formworks used on general sites for slabs, beams and columns are discussed in this chapter. Chapter 30 Detailing of Reinforcement: This chapter explains basic style of practical RCC structural drawings.

Now this book "Reinforced Concrete Vol. I", in its 30 Chapters and Appendix contains:

611	Neatly drawn sketches	329	Questions at the end of the chapters
100	Useful tables	021	Excel programs
253	Design problems	422	Short questions with answers.

CONTENT

The book in the present form will prove to be extremely useful to the students preparing for the Degree examinations in Civil Engineering and Architecture of all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S., and other similar competitive and professional examinations. It should also be an immense use to practicing Civil Engineers.

Catalogue Checklist

REINFORCED CONCRETE – VOL. I
DETAILED CONTENTS

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