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Chapter 13: Formulation Development and Evaluation of Solid Dosage Forms: A Comprehensive Analysis

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Abstract: The formulation development and evaluation of solid dosage forms represent a central focus within pharmaceutical sciences, encompassing a range of activities aimed at ensuring effective drug delivery, stability, and patient compliance. This paper examines the fundamental components, processes, and methodologies integral to creating reliable and high-quality tablets and capsules. Through analysis of preformulation studies, formulation design, manufacturing techniques, and contemporary evaluation methods, the discussion elucidates the strategies utilized to optimize performance characteristics. Consideration is given to regulatory factors and emerging technologies that influence product development, as well as ongoing challenges faced by formulators. By providing an overview of current practice and recent progress, the essay underscores the continuing relevance and complexity of solid dosage form development in modern healthcare.

Keywords: Solid dosage forms; Pharmaceutical formulation; Excipients; Quality control testing; Drug delivery systems

Introduction

Solid dosage forms, including tablets and capsules, are among the most widely utilized drug delivery systems in pharmaceutical practice due to their convenience, stability, and ease of administration. These formulations serve a fundamental role in ensuring accurate dosing, patient adherence, and the long-term preservation of drug potency during storage and distribution. In the context of modern healthcare, the process of



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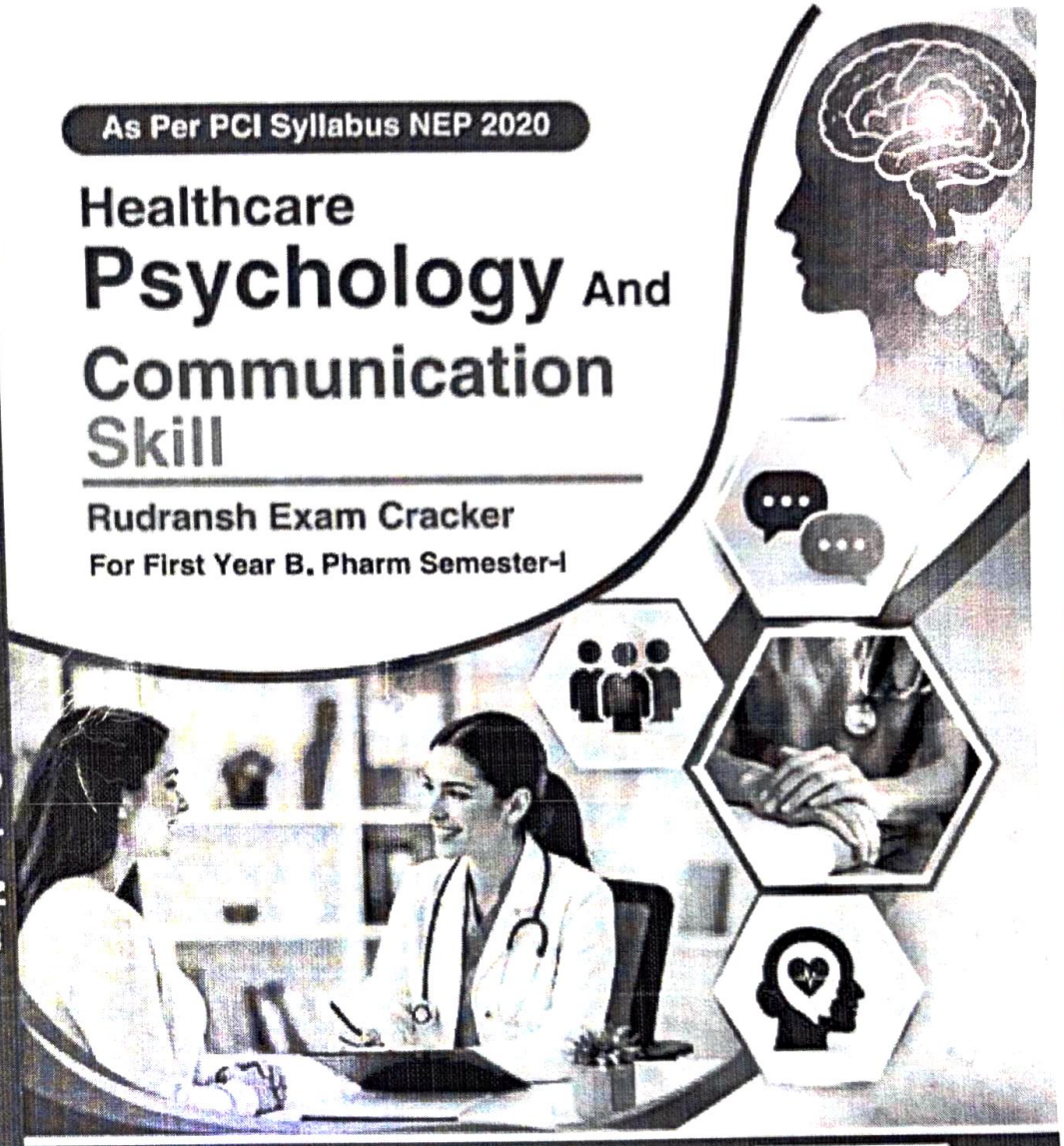
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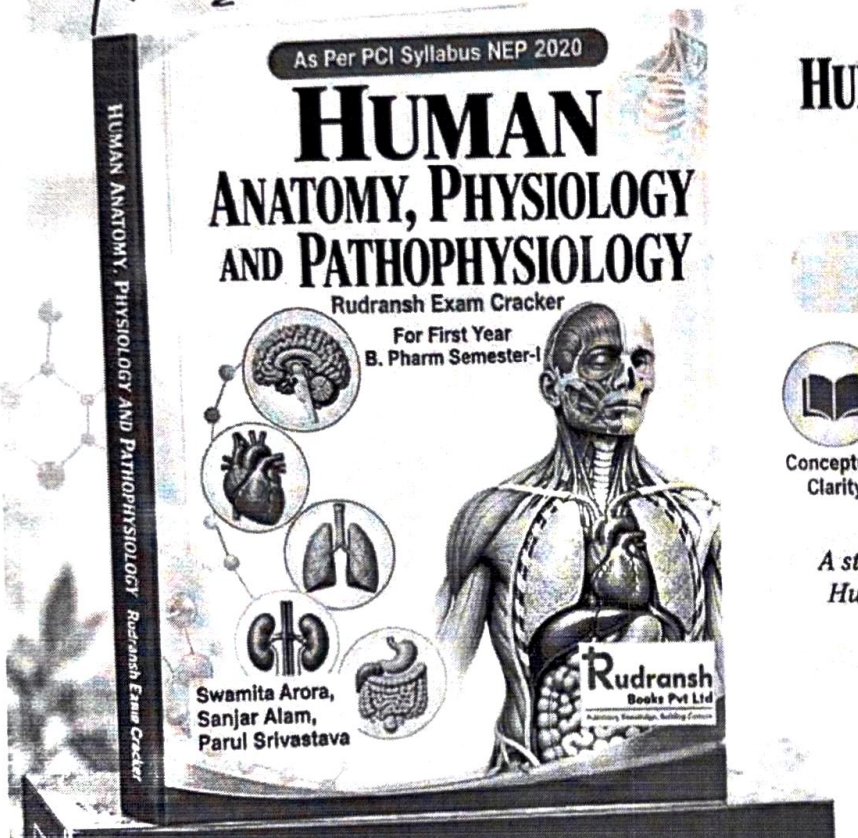
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May this book help pharmacy students learn, understand and build a brighter, healthier future!



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