According to the New Syllabus Prescribed by : Pharmacy Council of India

LAB MANUAL

Physical Pharmaceutics-I

For the Students of

B. PHARM THIRD SEMESTER

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PREFACE

It gives us immense pleasure to present to pharmacy students our book entitled **"A Practical Book of Physical Pharmaceutics-I"**. Writing a book is inspiring, often exciting, and sometimes very challenging work.

Physical Pharmaceutics-I is an important part of pharmaceutical education since it focuses on the underlying concepts that determine the physical properties and behaviour of medicines. This practical book is intended to serve as a practical guide for students conducting hands-on experiments to reinforce theoretical principles in Physical Pharmaceutics. The book contains calculations and important questions related to the experiments to fulfill the requirements of students. The manual connects theory and practice, providing a planned and comprehensive approach to laboratory exercises, improving students' understanding and appreciation of pharmaceutical physical features. The manual provides a thorough introduction to fundamental principles such as solubility, partition coefficient, and complexation, establishing a theoretical foundation for the experiments.

We record our sincere thanks to **Dr. Navneet Verma, Dr. Sushil Kumar, Dr. Munish Mani, Dr. Alka Lohani, Dr. Vijay Sharma, Dr. Mahaveer Singh, Ms. Anjali and Ms. Zaira Hussain f**or constant encouragement to write this book.

With the blessings of our parents, we could have been able to complete the book. We all the authors are thankful to our seniors, friends and students who gave us suggestions whenever we discussed for betterment of this book.

We appreciate the cooperation and interest taken by Gyan Publications in bringing out this book.

We will be grateful to all the teachers and students who will be kind enough to point out suggestive points for further improvement. Suggestions for future improvement are always welcome.

—Mitali Singh
—Zaira Hussain
—Anjali
—Dr. Arun Kumar Mishra

SYLLABUS

BP306P:
Physical Pharmaceutics-I

1. Determination the solubility of drug at room temperature.
2. Determination of pKa value by Half Neutralization/ Henderson Hassel balche quation.
3. Determination of Partition co- efficient of benzoic acid in benzene and water.
4. Determination of Partition co- efficient of Iodine in CCl_4 and water.
5. Determination of % composition of NaCl in a solution using phenol-water system by CST method.
6. Determination of surface tension of given liquids by drop count and drop weight method.
7. Determination of HLB number of a surfactant by saponification method.
8. Determination of Freundlich and Langmuir constants using activated char coal.
9. Determination of critical micellar concentration of surfactants.
10. Determination of stability constant and donor acceptor ratio of PABA-Caffeine complex by solubility method.
11. Determination of stability constant and donor acceptor ratio of Cupric-Glycinecomplex by pH titration method.

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List of Experiments

S.No.	Experiment	Page
1.	To determine the solubility of given sample at different temperature.	
2.	To determine pKa value of given sample by Half Neutralization/ Henderson Hessel Balch equation.	
3.	To determine partition co-efficient of benzoic acid in benzene and water.	
4.	To determine partition co-efficient of Iodine in CCl_4 and water.	
5.	To determine unknown % composition of NaCl in a solution using phenol-water system by CST method.	
6.	To determine surface tension of given liquids by drop count and drop weight method.	
7.	To determine HLB number of a given surfactant by saponification method.	
8.	To determine specific surface area and monolayer capacity (Freundlich and Langmuir isotherm) using activated char coal.	
9.	To determine critical micellar concentration (CMC) of given surfactant.	
10.	To determine stability constant and donor acceptor ratio of PABA-Caffeine complex by solubility method.	
11.	To determine stability constant and donor acceptor ratio of Cupric-Glycine complex by pH titration method.	
12.	To determine viscosity of given liquid by using Ostwald viscometer.	
13.	To study flow properties of powder and effect of lubricant on flow properties.	
14.	Miscellaneous.	