

3.3.2

Number of the books chapters
in edited volumes/books
published in national/
international conference
proceedings per teacher during
last five years

Findings of DVV-

Provide Cover page, content page and first page of A Practical Book of Human Anatomy and Physiology, Communication Skill, Advanced Practicals in Pharmaceutical Engineering, Computer Applications in Pharmacy, A Practical book of Pharmaceutical Microbiology for Pharm D. (SY Pharm D), A Textbook of Novel Drug Delivery System with ISBN numbers, title, author, Department/ School/Division/ Centre/ Unit/ Cell, name and year of publication.

BOOKS PUBLICATIONS As per DVV Clarification

Sr. No.	Name of The teacher	Department	Title of the book/chapters published	Year of publication	Affiliating Institute at the time of publication	ISBN number of the proceeding	Name of the publisher	Data Provided
1	Dr. N.S. Vyawahare	Pharmacology	A Practical Book of Human Anatomy and Physiology	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-87686-00-7	Nirali Prakashan	Cover Page Content Page First Page
2	Dr. D. S. Shirode	Pharmacology	A Practical Book of Human Anatomy and Physiology	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-87686-00-7	Nirali Prakashan	Cover Page Content Page First Page
3	Dr. N.S. Vyawahare	Pharmacology	Communication Skill	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-5451-349-7	Nirali Prakashan	Cover Page Content Page First Page
4	Dr. N.S. Vyawahare	Pharmacology	Advanced Practicals in Pharmaceutical Engineering	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-80744-93-3	Pharma Career publication	Cover Page Content Page First Page
5	Dr. P. M. Chaudhari	Pharmaceutics	Computer Applications in Pharmacy	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-5585-073-7	Technical Publications	Cover Page Content Page First Page
6	Dr. S.P. Chaudhari	Pharmaceutics	A Practical book of Pharmaceutical Microbiology for Pharm D. (SY Pharm D)	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978-93-5451-489-0	Nirali Prakashan, Pune	Cover Page Content Page First Page
7	Dr. P. M. Chaudhari	Pharmaceutics	A Textbook of Novel Drug Delivery System	2022	Dr. D. Y. Patil pratishthan Dr. D. Y. Patil college of pharmacy akurdi, pune - 411 044	978 81 7660 3799	Everest Publishing House	Cover Page Content Page First Page



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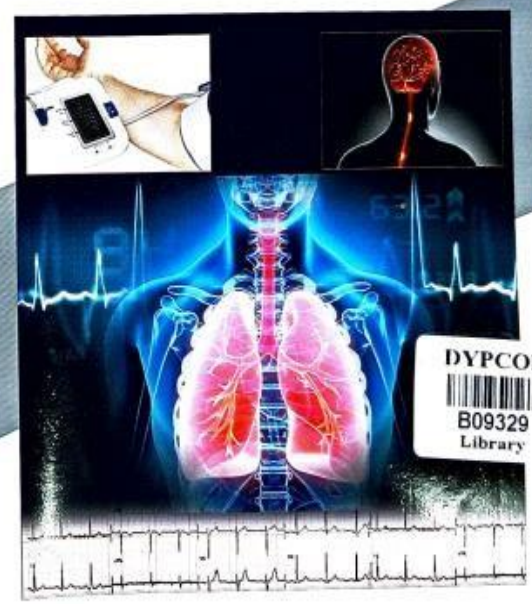
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A PRACTICAL BOOK OF HUMAN ANATOMY AND PHYSIOLOGY

Dr. Shilpa A. Deshpande
Prashant N. Amale

Dr. Niraj S. Vyawahare
Dr. Devendra S. Shirode



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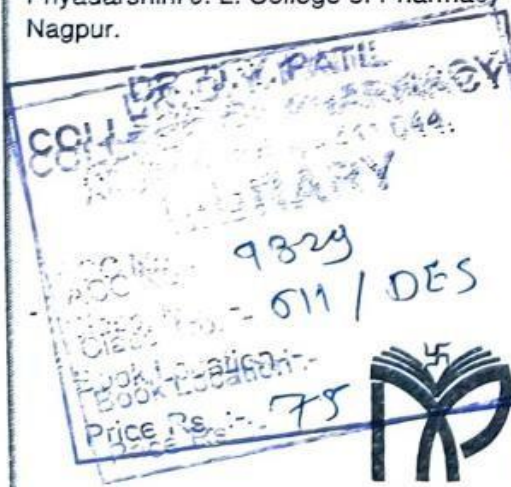
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1. Study of Compound Microscope

Aim: To study the compound microscope.

Requirements:

Compound Microscope, permanent slide (or any other specimen).

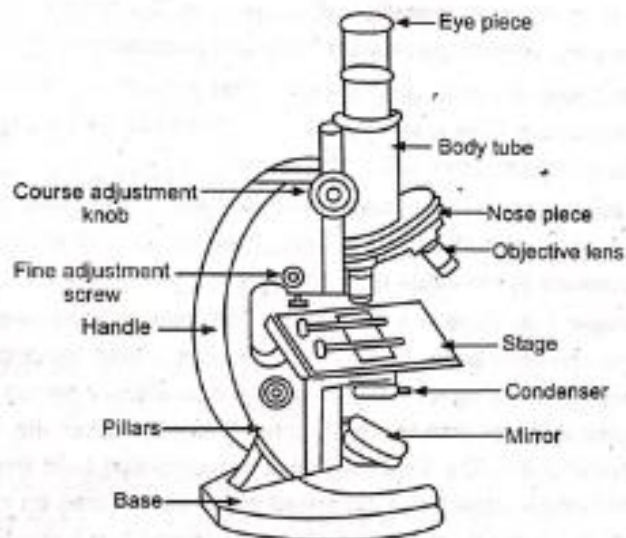


Fig. 1.1: Compound microscope

Theory:

The microscope is one of the most commonly used instruments in medical, paramedical and clinical laboratories. It is used to study Cell Morphology, Histology, Histopathology and Microbiology. A microscope helps us to see microscopic objects that are too small and invisible to the naked eye.

Description of Compound Microscope:

The compound microscope has the following main parts:

1. The supporting system.
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3. The optical or magnifying system.

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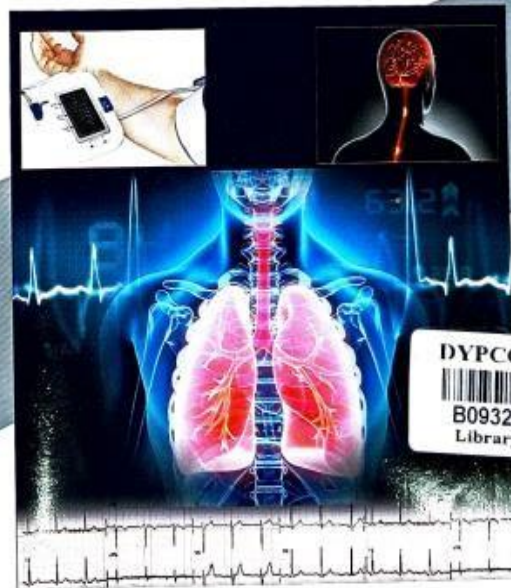
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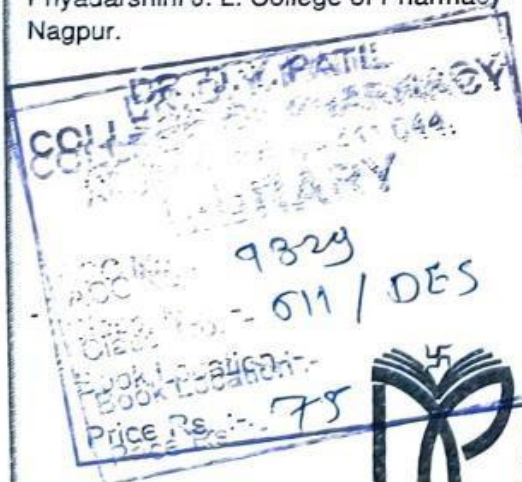
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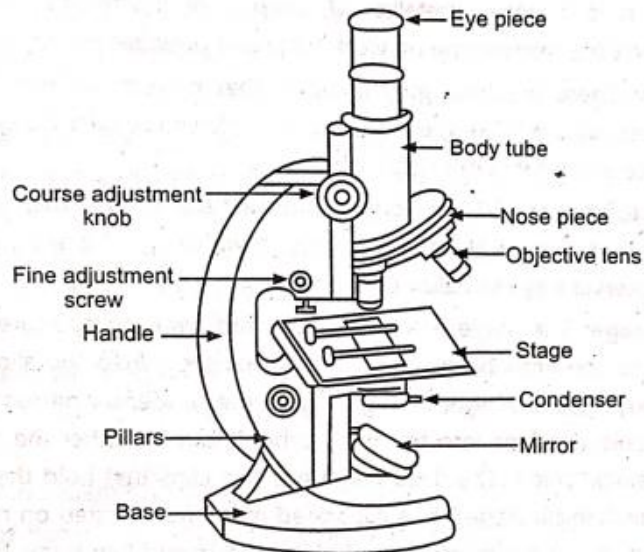


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Syllabus

UNIT I

Communication Skills : Introduction, Definition, The Importance of Communication, The Communication Process - Source, Message, Encoding, Channel, Decoding, Receiver, Feedback, Context.

Barriers to Communication : Physiological Barriers, Physical Barriers, Cultural Barriers, Language Barriers, Gender Barriers, Interpersonal Barriers, Psychological Barriers, Emotional Barriers.

Perspectives in Communication: Introduction, Visual Perception, Language, Other Factors affecting our perspectives - Past Experiences, Prejudices, Feelings, Environment.

UNIT II

Elements of Communication: Introduction, Face to face Communication, Tone of Voice, Body Language (Non-Verbal Communication), Verbal Communication, Physical Communication.

Communication Style: Introduction, The Communication Styles Matrix with example for each - Direct Communication Style, Spirited Communication Style, Systematic Communication Style, Considerate Communication Style.

UNIT III

Basic Listening Skills: Introduction, Self-Awareness, Active Listening, Becoming an Active Listener, Listening in Difficult Situations.

Effective Written Communication: Introduction, When and When Not to Use Written Communication-Complexity of the Topic, Amount of Discussion Required, Shades of Meaning, Formal Communication.

Writing Effectively: Subject Lines, Put the Main Points First, Know Your Audience, Organization of the Message.

UNIT IV

Interview Skills: Purpose of an Interview, Do's and Don'ts of an Interview.

Giving Presentations: Dealing with Fears, Planning Your Presentation, Structuring Your Presentation, Delivering Your Presentation, Techniques of Delivery.

UNIT V

Group Discussion: Introduction, Communication Skills in Group Discussion, Do's and Don'ts of Group Discussions.



Chapter 1 ...

Communication Skills

Contents ...

- (A) Introduction, Definition, Importance of Communication.
- (B) The Communication Process – Source, Message, Encoding, Channel, Decoding, Receiver, Feedback, Context.

1.1 INTRODUCTION

- Communication has always existed in the world. It is not just humans that communicate, but all the living organisms in the world communicate with each other in some or the other form.
- Man realized that to progress and to rule over the world, he needs to communicate with his fellow beings in the most effective way.
- Before humans were able to use speech as a mode of communication, they communicated through different sounds and gestures but with evolution, the human evolved in their mode of communication as well, and thus we developed speech for communication.
- In today's competitive world, we have realized that it is not enough to merely communicate but to communicate effectively is the key to be successful.

1.2 Definition

Communication can be defined as the transfer of one's ideas, thoughts or feelings to another person through an appropriate medium in a manner that the meaning of the message is not lost in the process.

- There is a communication when you talk or listen to someone. For instance, a teacher while delivering his lecture communicates to his students. But if he speaks or writes in a language which is not understandable to his students, there is no communication. When you read a book, its author communicates to you. But communication does not mean merely written or oral messages.

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About the Book

The book *Advanced Practicals in Pharmaceutical Engineering* is for B. Pharm students. It provides updated knowledge about practicals, explained in a student-friendly way, so that students will understand exact use and application of the same in the pharma industry. It is a comprehensive compilation of practicals and covers all topics as per PCI syllabus. Every practical includes its application, which contains probable and best use of that practical in the current pharma industry.

About the Authors



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Experiment No. 01

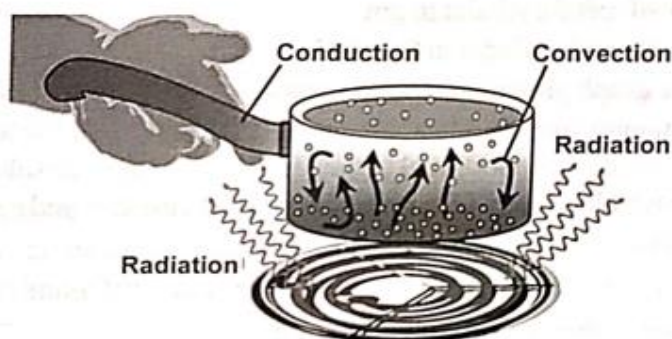
Aim: Determination of radiation constant of Brass, Iron, Unpainted and Painted glass.

Requirements: Metal cylinders of iron and brass with a hole to fit a thermometer, painted and unpainted round bottom flask with long neck, thermometer, scale, record book, pencil, wood block, water, calculator, hotplate or burner.

Principle : Heat is the form of energy that can be transferred from one system to another as a result of temperature difference.

Heat can be transferred in three different Mechanisms:

1. Conduction
2. Convection
3. Radiation



Theory :

1. Conduction: Heat is transferred by conduction when adjacent atoms vibrate against one another or as electrons move from one to another. Conduction is the most significant means of heat transfer within the solid or between solid objects in thermal contact. eg. Heat Transfer between two steel plates.

2. Convection: This is caused due to the temperature differences across the fluid. When a fluid is heated due to the increased kinetic energy in the particles region in the adjoining with the heat source becomes less dense (lighter). The portion of fluid that is less dense then upsurges while the denser (heavier) portion of fluid sinks. These motions in fluid cause the transfer of energy. e.g. Heating of water and oil.

3. Radiation: The transfer of the energy by means of the emission of electromagnetic radiation is called 'radiation heat transfer. e.g. Synthesis of drugs by using microwave oven/green chemistry.

A freely suspended hot body loses heat by conduction, convection, and radiation until it reaches the room temperature. In this system, heat loss through convection is derelict, since movement of particle is minor. As the metal cylinder is freely suspended without any contact

Experiment-01 / 1

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B. Pharmacy

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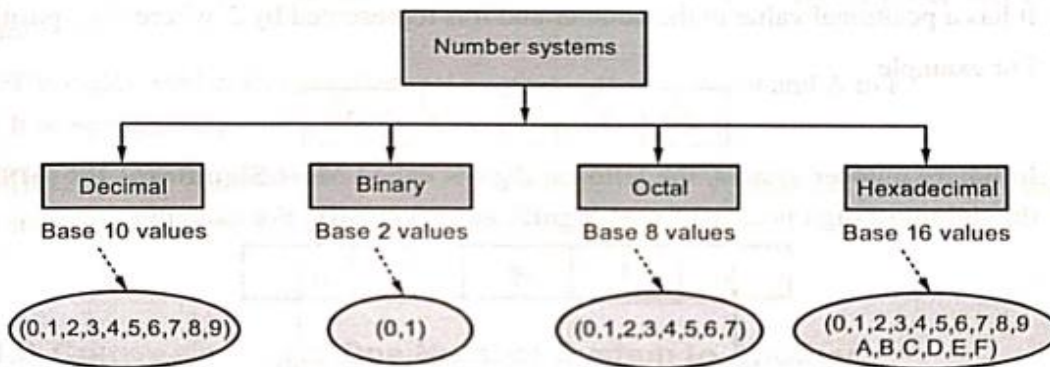
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Part I : Number System**1.1 Introduction to Number System**

- ◆ Number system is a set of values used to represent different quantities.
- ◆ Some important number systems are -
 - Decimal number system
 - Binary number system
 - Octal number system
 - Hexadecimal number system
- ◆ Fig. 1.1.1 represents various types in number systems.

**Fig. 1.1.1 : Number systems****Importance of number system in computers**

- ◆ Number systems is a writing system for **expressing number**.
- ◆ Number system is necessary for solving **mathematics problem**.
- ◆ Computer is an electronic device and it understand only two things - **on and off**. These **two values** are represented by using **binary number system**. Thus there is a need for binary number system.
- ◆ Although computer can understand binary number system, a common user can not. The number system that we use in our **day-to-day life** is the **decimal number system**. Decimal number system has base 10 as it uses 10 digits from 0 to 9. Thus, there is a need for decimal number system.

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INTRODUCTION

Table 1: List of Equipment used in Microbiology Laboratory

Equipment	Use
Loop (wire/plastic)	Inoculation of agar slopes/deeps and small volumes of liquid media (up to 10 cm ³); preparation of streak plates.
Straight wire	Inoculation from very small colonies.
Spreader (glass/plastic)	Making spread/lawn plates.
Forceps (metal/plastic)	Transfer of sterile paper, antibiotic discs.
Pipette (calibrated/dropping; glass/plastic)	Transfer of measured volumes/drops of culture/sterile solutions.
Teat	Safe filling and emptying pipettes.
Test tube	Small volumes (capacity 5-10 cm ³) of liquid media/agar slopes/sterile solutions for inoculation (held in test tube rack; dry non-absorbent cotton wool plug or plastic cap prevents contamination).
Universal bottle (wide neck) McCartney bottle (narrow neck)	Volumes of liquid and agar media/sterile solutions up to 20 cm ³ for inoculation or for storing sterile media or stock cultures on agar slope.
Bijou bottle	Very small volumes (up to 3 cm ³) of sterile solutions.
Medical flat	Large volumes of sterile media/solutions for storage; available in a range of capacities, 50-500 cm ³ .
Conical flask	Large volumes of liquid media for inoculation and liquid/media for short-term storage.
Petri dish (plastic/glass)	Plastic: pre-sterilized for streak/spread/lawn/pour plates. Glass: only for materials for sterilization by hot air oven.
Marker pen	Labeling Petri dishes, test tubes, flasks, bottles, and microscope slides.
Personal protective equipment	Clean laboratory coat/apron: protection of clothing, containment of dust on clothing; Safety spectacles: not considered essential when dealing with suitable cultures and observing GMLP, but may be required by local regulations and for dealing with chemicals.

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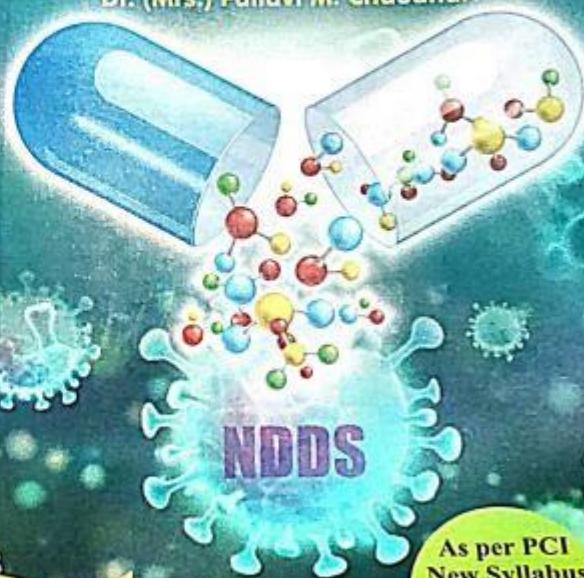
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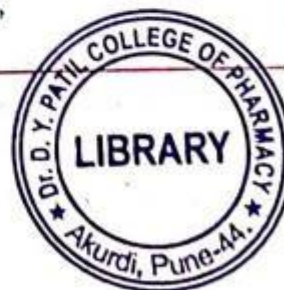


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PREFACE

It gives me immense pleasure to introduce first edition of my book entitled "A Textbook of Novel Drug Delivery System". This book has been designed for graduate students as per the syllabus prescribed by Pharmacy Council of India (PCI).

To get acquainted with the recent trends, the curriculum of B. Pharmacy has been upgraded by PCI. Thus, the aim of this book is to make students understand the concepts of this subject.

The book consists of a total of 5 Units which are distributed amongst 11 Chapters. The Book is designed to meet the requirements as per the examination pattern and has Questions for evaluation along with Multiple Choice Questions.

This book is a genuine effort to clarify the basics of various drug delivery systems, and provide information in lucid way in the form of pictographic, flow charts and existing marketed preparations. All efforts have been made to present the subject in student friendly manner.

However, any suggestions and constructive comments would be highly appreciated on info@everestpublishinghouse.com so it can be incorporated in the future edition.

In Unit II, III & V the arrangement of chapters are given in such an order which will help the students in understanding the topics better conceptually.

Dr. (Mrs) Pallavi Manojkumar Chaudhari



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UNIT I

Chapter 1

CONTROLLED DRUG DELIVERY SYSTEMS

Introduction, terminology/definitions and rationale, advantages, disadvantages, selection of drug candidates. Approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Physicochemical and biological properties of drugs relevant to controlled release formulations.

INTRODUCTION

A drug delivery is a formulation that enable, introduce a drug in the body, which will provide improve efficacy and is safe, to control rate, release of drug in body. There are different dosage forms available for delivery like tablets, capsules, liquids, ointments, creams, injections, aerosols, suppositories etc. So, for this introduction of drugs, there are number of routes of administration, out of that oral route is most preferable one. The advantages of this route include- ease of preparation and administration, convenient, good patient compliance, non invasive, cost effective etc. Though these are advantageous, but do possess some disadvantages like, the dosage forms are exposed to uneven conditions, throughout the GIT, that may affect the absorption of the drug, these conventional dosage forms provide immediate release of the drug with little or no control over rate of delivery. Thus to achieve and maintain therapeutically effective plasma concentrations, frequency of doses is increased, that in turn cause remarkable fluctuations (peak and valleys pattern) in plasma level concentration. As a result, the drug level fall down the minimum effective concentration (MEC) or else exceed maximum tolerable concentration (MTC), and further result in side effects or lack of desired therapeutic benefit to the patient.