

B.Pharm 1st Semester

Pharmaceutics-I

(Theory)

36 hours

Unit-I

1. Historical back ground and development of profession of Pharmacy, their scope and significance.
 2. Introduction to Pharmacopoeias and Formularies with special reference to Indian Pharmacopoeia.
 3. Metrology- systems of weights and measures. Pharmaceutical calculations, spirits of pharmaceutical importance.
 4. Posology : Definitions, factors affecting dose of a drug, calculation of child dose and infant dose, geriatric dose.
 5. Prescription: Definitions, parts of prescription, Latin terms commonly used, handling.
 6. Introduction to various dosage forms- classification and definitions with example and their applications.
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7. Pharmaceutical incompatibilities.
 8. Packaging of pharmaceuticals- Desirable features of a container, types of container, closures etc.
 9. Theoretical aspects of commonly used pharmaceutical aids.
 10. Galenicals, Extraction processes and their application in pharmacy with example.
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PRACTICAL

36 hours

Dispensing of at least 30 products covering all dosage forms including mixtures, emulsions, Lotions, Liniments, ENT preparations, ointments, powders , spirit, tinctures, aromatic water etc.

* Book Recommended:

1. I.P., B.P., N.F.I., B.N.F.
2. Remington's Pharmaceutical Sciences.
3. Dispensing Pharmacy by cooper and Gunn.

SEMESTER-I

Pharmaceutical Chemistry-I (Inorganic Pharmaceutical Chemistry)

Theory

Unit-I

36 hrs

1. Sources of impurities, tests for purity and identity, including limit tests for iron, arsenic, lead, heavy metals, chloride, sulphate and special tests if any, for inorganic pharmaceuticals included in Indian Pharmacopoeia.
2. Acids and Bases: Buffers, Water.
3. Gastrointestinal tract Agents including Acidifying agents, antacids, protectives and adsorbents, cathartics and radio opaque substances.
Major Intra and Extra cellular Electrolytes: Physiological ions, electrolytes used for replacement therapy, acid base balance.
5. Essential and trace elements: Transition elements and their compounds of pharmaceutical importance : Preparation of Iron and calcium compounds, their absorption and metabolism.

UNIT -II

6. Topical agents : protectives, astringents and anti-infectives, Humectant & Moisturiser, U.V screening agent.
7. Gases and vapours : Oxygen, Anesthetics and Respiratory stimulants and other gases of pharmaceutical importance.
8. Oral care products: Dentifrices, anti-carries agents, mouth freshner.
9. Miscellaneous agents: Sclerosing agents, expectorants, emetics, poisons and antidotes, sedatives, anti oxidants etc. Pharmaceutical aids including preservatives, filter aids, adsorbents, diluents, suspending agents, colorants etc.
10. Inorganic Radio pharmaceuticals : Nuclear radio pharmaceuticals, reactions, nomenclature, methods of obtaining their standards and units of activity, measurement of activity, clinical applications – therapeutic and diagnostic, dosage, hazards and precautions.

1.1.4. Practical.

36 hrs

The background and systematic qualitative analysis of inorganic mixtures of maximum four radicals. Six mixtures to be analyzed preferably by semi micro methods. All identification tests for inorganic pharmaceuticals and qualitative tests for cations and anions should be covered.

SEMESTER-I

Environmental Science & Community Health

36 hrs.

UNIT-I

1. Environment and Health – Social and Natural. Human dependence on environment.

2. Natural Resources and their utilization.

Air, water, land (soil and minerals) and sunlight. Utilization of resources for development of developmental and social activities, pollution of water, air, noise, light and their control. Over utilization of resources and possible hazards. Utilization of non conventional energy- sources and generation.

3. Medical entomology, arthropod borne diseases and their control, rodents, animals and diseases.

4. Communicable diseases and their prevention.

UNIT-II

5. Waste generation- sources, types of waste- solid, liquid and gaseous, hazards of waste accumulation, waste, community health and sanitation.

6. Management of wastes- (i) Solid waste disposal, (ii) liquid waste disposal and gaseous waste disposal. Conditions for proper waste management, proper functioning of Governmental and local bodies.

7. Biomedical waste management- sources, method of disposal- the legislation and effective enforcement, utility.

8. Epidemiology – its scope, methods, uses, dynamics of disease transmission. Immunity and immunization. Hospital acquired infection, prevention and control.

BASIC ELECTRONICS & COMPUTER APPLICATION (Theory)**UNIT-I**

1. Basic Electronics.
- 1.1 Semiconductors (Types, Property & uses), diode, rectifier (half-wave, full-wave), transistors (configurations, uses), Logic gates, IC (advantages, limitations, types & uses). Flip, Flop.
2. Computers.
- 2.1. Introduction to Computers, Computer classification (Mainframe, Mini, Micro, Super Computers), Comparison of Analog and Digital computers, Hard-ware and Software, Human-ware, calculator and computer.
- 2.2. Operating System:- Introduction to Operating system, types, UNIX, MS-DOS, RAM, ROM, virtual memory etc.
- 2.3. Types of language:- Conventional languages, their advantages, limitations, C, C++, Programming of these languages.
- 2.4. Introduction to computer networks, types, Network topology, roles of protocol, Architecture of seven layers of communications.

UNIT-II

- 2.5. Introduction to Data structure like Queues, list, trees, binary trees, algorithm, flowchart, structured systems, analysis and development, Ingress-SQL. Methodologies, language basics.
Functions and subroutines (user defined functions, subroutines, subscripted variables)
- 2.6 Introduction and purpose of database system. Introduction to FOXPRO, Creation of databases, entering records, listing contents, closing database, data types, viewing and editing files, simple mathematical commands and functions, simple programming with FOXPRO.
- 2.7 An overview of Internet and world wide web, Internet basics, access to Internet, WWW basics, website, Functioning of web, Importance of web information and services available on Internet and www. Browsers services, Universal resource locator, Introduction to HTML.
- 2.8 Application of Computer in the field of Pharmacy.

36 hrs.

PRACTICALS:- Computer operating systems like Programming in C, C++, MS-DOS etc. WINDOWS (office), Internet Practice, Data base Programming (Practice).

SEMESTER –I

Remedial Mathematics

1.1.2. Theory

UNIT-I

36 hours

1. Algebra : Equations reducible to quadratics, simultaneous equations (Linear and Quadratic), Determinants, properties of solution of simultaneous equations by Cramer's rule, matrices, definition of special kinds of matrices, arithmetic operations on matrices, inverse of a matrix, solution of simultaneous equations by matrices, pharmaceutical applications of determinants and matrices, Evaluation of En1, En2 and En3 mensuration and its pharmaceutical applications.
2. Trigonometry: Measurement of angle, compound angle, T-ratios, addition, subtraction and transformation formulae, T-ratios of multiple, submultiple, allied and certain angles, Application of logarithms in pharmaceutical computations.

UNIT-II

3. Analytical Plans Geometry: Certain coordinates, distance between two points, area of triangle, a locus of point, straight line, slope and intercept form, double intercept form, normal (perpendicular form), slope-point and two point form, general equation of first degree.

4. Calculus:

Differential : Limits and functions, definition of differential coefficient, differentiation of standard functions, including function of a function (chain rule), Differentiation of implicit functions, logarithmic differentiation, parametric differentiation, successive differentiation.

Integral: Integration as inverse of differentiation, indefinite integrals of standard forms, integration by parts, substitution and partial fractions, formal evaluation of definite integrals. Formation of differential equation, solution 1st and 2nd angle.

1. Methods of classification of plants.
2. Plant Cell : It's structure and non-living inclusions, mitosis and merosis, different types of plant tissues and their functions.
3. Morphology and histology of root, rhizome stem, bark, wood, leaf, flower fruit and seed, modification of stem.

UNIT-II

1. General survey of Animal kingdom, structure and life history of parasites as illustrated by amoeba, entamoeba, trypanosoma, plasmodium, taenia, ascaris, schistosoma, oxyuris and ancylostoma etc.
2. General structure and life history of insects like mosquito housefly, mites, silkworm and sandfly.

Practical (Remedial Biology)

36 hrs.

1. Care, use and type of microscopes
2. Morphology of plant parts indicated in theory.
3. Gross identification of slides of structure and life cycle of lower plants/animals mentioned in theory.
4. Morphology of plant parts indicated in theory.
5. Preparation, microscopic examination of stem, root and leaf of monocot and dicot plants.
6. Structure of human parasites and insects mentioned in theory with the help of specimens.