Code: PY  Pharmacy

Pharmacognosy & Phytochemistry:
Sources of Crude Drugs of Natural Origin and Their Classification; Factors Affecting the Cultivation of Medicinal and Aromatic Plants, Plant Growth Regulators; Adulteration and Types of Adulterants; Methods of Evaluation of Crude Drugs;
Definition, Classification, Properties, General Method of Extraction, Chemistry, Tests for Detection of Following Classes of Phytoconstituents- Alkaloids, Glycosides, Terpenoids (Volatile Oils, Resin and Resin Combinations), Tannins, Carbohydrates, Lipids, Proteins and Enzymes. Pharmacognostic Aspects of Crude Drugs Containing Aforesaid Classes of Phytoconstituents Covering Their Biological Source, Diagnostic Features, Chemical Constituents, Tests for Identification, Uses, Adulterants, Substituents and Allied Drugs (If Any);
Study of Fibres Used in Pharmacy- Cotton, Silk, Wool, Nylon, Polyesters, Glasswool and Asbestos.
Plant Tissue Culture: Types of Cultures, Nutritional Requirements, Growth and Their Maintenance. Applications of Plant Tissue Culture.

Pharmaceutical Chemistry:
Biochemistry: Metabolism of Carbohydrates, Proteins & Amino Acids, Lipids and Nucleic Acids; Enzymes.
Inorganic Pharmaceuticals: Gastrointestinal Agents; Electrolytes; Haematinics; Topical Agents; Dental Products; Limit Tests for Arsenic, Iron, Lead, Barium, Chloride and Sulphate.

Pharmaceutics:
Physical Pharmacy: Matter and Properties of Matter; Micromeretics and Powder Rheology; Surface and Interfacial Phenomenon; Viscosity and Rheology; Dispersion Systems; Complexation; Kinetics
and Drug Stability.

**Pharmaceutical Microbiology and Biotechnology:** Methods of Sterilization- Moist and Dry Heat, Filtration, Radiation and Gaseous; Sterility Testing; Media; Sampling; Neutralization of Various Antimicrobial Substances in Dosage Forms; Principles of Microbiological Assays.

Principles of Immunology- Immunity; Classification of Immunity; Natural and Acquired Immunity; Manufacture and Standardization of Cholera, BCG, Polio and Rabies Vaccines; Diphtheria Toxoid, Tetanus Antitoxin. Monoclonal Antibodies- Preparation and Applications.

**Pharmaceutical Technology:** Pre-formulation Studies; Pharmaceutical Calculations; Formulation, Development, Packaging and Evaluation of: Liquid Dosage Forms, Semisolid Dosage Forms, Tablets, Capsules, Micro-Encapsulation, Aerosols, Parenteral Products, Ophthalmic Preparations, Suppositories, Blood Products and Plasma Substitutes and Surgical Products; Cosmetic Preparations: Skin, Hair, Nails, Lips, Eye, Baby Care Products and Dentifrices.

**Biopharmaceutics & Pharmacokinetics:** Passage of Drugs Across Biological Barrier; Factors Influencing Absorption- Biological, Physico-Chemical, Physiological and Pharmaceutical; Basic Principles of Pharmacokinetics; Compartment Kinetics- One Compartment Model with Reference to Intravascular and Oral Drug Administration; Concept of Clearance; Non-Linear Pharmacokinetics with Reference to One Compartment Model After I.V. Drug Administration; Bioavailability and Bioequivalence.

**Pharmacology:**


**Clinical Pharmacy:** Therapeutic Drug Monitoring, Dosage Regimen in Renal and Hepatic Impairment. Drug-Drug Interactions and Drug-Food Interactions, Adverse Drug Reactions. Medication History, Interview and Patient Counseling
Pharmaceutical Analysis and Quality Assurance:
Concepts of Qualitative and Quantitative Analysis, Fundamentals of Volumetric Analysis, Methods of Expressing Concentration, Primary and Secondary Standards; Acid-Base, Oxidation-Reduction, Precipitation, Non-Aqueous and Complexometric Titrations; Gravimetric Analysis; Methods of Moisture Determination; Concept of Error, Precision, Accuracy, Specificity, Sensitivity, Detection Limit, Linearity and Range. Ruggedness, Standards, Standardization, Calibration of Analytical Equipments. Principles, Instrumentation and Applications of the Following: Absorption Spectroscopy (UV, Visible & IR), Fluorimetry, Flame Photometry, Potentiometry, Conductometry and Polarography; Chromatographic Methods (Paper, TLC, Column, GC and HPLC); Electrophoresis; Ria; Elisa; Pharmacopoeial Assays. Quality Assurance and Quality Control Methods, Concepts of GMP and GLP.

Forensic Pharmacy: Pharmacy Act 1948; Drugs and Cosmetics Act 1940 and Rules 1945 and Amendments Thereto; Narcotic Drugs & Psychotropic Substances Act 1985 and Rules; Drugs Price Control Order.

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