

<b>Indicative Syllabus</b>	
<b>Name of Post</b>	Pharmacist
<b>Minimum Educational Qualification</b>	Full time Diploma/Degree in Pharmacy

### **1. PHARMACEUTICS**

Introduction to different dosage forms, their classification with examples-their relative applications. Familiarization with new drug delivery systems. Introduction to Pharmacopoeias with special reference to the Indian Pharmacopoeia. Size reduction, Size separation, Metrology-system of weights and measures, Calculations including conversion from one to another system. Percentage calculations and adjustment of products. Use of alligation method in calculations. Isotonic solutions. Mixing and homogenization. Packaging of pharmaceuticals Extraction and galenicals, Clarification and filtration, Heat processes, Introduction to drying processes, Distillation, Sterilization-concept of sterilization and its differences from disinfection-thermal resistance of microorganisms. Detailed study different sterilization processes. Study of immunological products like sera vaccines, toxoids and their preparations., Processing of tablets, Processing of capsules.

### **2. PHARMACEUTICAL CHEMISTRY**

Acids, bases and buffers, Gastrointestinal agents, Acidifying agents, Antacids, Protectives and adsorbents, Saline cathartics. Antioxidants, Topical agents - (i) Protectives (ii) Antimicrobials and astringents (iii) Sulphur and its compounds (iv) Astringents-alum and zinc sulphate. Dental product, Inhalants, Respiratory stimulants, Expectorants and emetics, Antidotes. Major intra and extracellular electrolytes, Inorganic official compounds of iron, iodine and calcium; ferrous sulfate and calcium gluconate. Radio pharmaceuticals and contrast media radioactivity, Identification tests for cations and anions as per Indian Pharmacopoeia. Quality control of drugs and pharmaceuticals

### **3. PHARMACOGNOSY**

Definition, history and scope of pharmacognosy including indigenous system of medicine. Various systems of classification of drugs of natural origin. Adulteration and drug evaluation; significance of pharmacopoeial standards, therapeutic effects and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins. Occurrence, distribution, organoleptic evaluation, chemical constituents including tests wherever applicable and therapeutic efficacy of {a) Laxatives (b) Cardiotonic (c) Carminatives & G.I. regulators catechu. hyoscyamus, belladonna, aconite, ashwagandha, ephedra, opium, cannabis, nux vomica, rauwolfia. vasaka, tolu balsam, tulsi, guggal, colchicum, vinca. chaulmoogra oil. pterocarpus, gymnema sylvestro, gokhru, punarnava. ipecacuanha. benzoin, myrrh, neem, curcuma. cinchona. ergot. shark liver oil and amla. papaya, diastase, yeast. Collection and preparation of crude drugs from the market as exemplified by ergot, opium, rauwolfia, digitalis, senna, Study of source, preparation and identification of fibres used in sutures and surgical dressings-cotton, silk, wool and regenerated fibres.

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#### **4. BIOCHEMISTRY AND CLINICAL PATHOLOGY**

Introduction to biochemistry. Brief chemistry and role of carbohydrates, proteins, lipids, their classification and related diseases. Role of minerals and water in life processes. Brief chemistry and role of vitamins and coenzymes. brief concept of enzymatic, Introduction to pathology of blood and urine.

#### **5. HUMAN ANATOMY AND PHYSIOLOGY**

Definition of various terms used in anatomy, physiology, Structure of cell, unction of its components with special reference to mitochondria and microsomes. Elementary tissues of the body, Composition of blood, blood group and coagulation of blood, Name and functions of lymph glands. Anatomy and physiology of different body systems in Brief.

#### **6. HEALTH EDUCATION & COMMUNITY PHARMACY**

Concept of health-definition, indicators of health, concept of disease, prevention of diseases, Environment and health. First aid-emergency treatment in shock, snake bite, burns, poisoning, heart disease, fractures and resuscitation methods. Elements of minor surgery and dressings, Fundamental principles of microbiology, organisms of common diseases. Non-communicable diseases-causative agents, prevention, care and control. Cancer, diabetes, blindness, cardiovascular diseases. Communicable disease-causative agents, modes of transmission and prevention. (a) Respiratory infections-chicken pox, measles, influenza, diptheria, whooping cough and tuberculosis. (b) Intestinal infections-poliomyelitis, hepatitis, cholera, typhoid, food poisoning, hookworm infection. (c) Arthropod borne infections-plague, malaria, filariasis. (d) Surface infections-rabies, trachoma, tetanus, leprosy. (e) Sexually transmitted diseases-syphilis, gonorrhoea, AIDS. Nutrition and health, vitamins and minerals. Demography and family planning, natural family planning methods, chemical methods, mechanical methods, hormonal, contraceptives, population problem of India. Epidemiology -I mmunity and immunisation, immunological products and their dose schedule. Principles of disease control and prevention, hospital acquired infection, prevention and control.

#### **7. DISPENSING PHARMACY**

Prescriptions : Reading and understanding of prescription; Incompatibilities in prescriptions, Posology: Dose and dosage of drugs, Dispensed Medications: (i) Powders (ii) Liquid oral dosage (b) Biphasic liquid dosage forms: • Suspensions • Emulsions (iii) Dental and cosmetic preparations: (iv) Semi-solid dosage forms: (a) Ointments (iv) emulsification. (v) Sterile dosage forms: (a) Parenteral dosage forms (b) Sterility testing, (c) Ophthalmic products- study of essential characteristics of different ophthalmic preparations.

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## **8. PHARMACEUTICAL CHEMISTRY II**

chemistry of pharmaceutical organic compounds covering their nomenclature, chemical structure, uses and the important physical and chemical properties. The stability and storage conditions and the different types of pharmaceutical formulations of the drugs.

## **9. PHARMACOLOGY AND TOXICOLOGY**

Introduction to pharmacology, scope of pharmacology. Routes of administration of drugs, their advantages and disadvantages. Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs. General mechanism of drugs action and the factors which modify drugs action. Pharmacological classification of drugs. (i) Drugs acting on the central nervous system: (a) General anaesthetics, intravenous anesthetics. (b) Analgesic, antipyretic, sedatives and hypnotics, anti-convulsants, (ii) local anaesthetics. (iii) Drugs acting on autonomic nervous system. (iv) Drugs acting on eye, (v) Drugs acting on respiratory system (vi) Antacids, (vii) Cardiovascular drugs, (viii) Drugs acting on the blood and blood forming organs. (ix) Drugs affecting renal function (x) Hormones and hormone antagonists (xi) Drugs acting on digestive system

## **10. PHARMACEUTICAL JURISPRUDENCE**