

SYLLABUS FOR THE POST OF PHARMACIST

Section-A

70 Marks

Domain Knowledge

Unit I HUMAN ANATOMY AND PHYSIOLOGY: Introduction to human body Definition and scope of anatomy and physiology, levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminology, Cellular level of organization Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, intracellular signalling pathway activation by extracellular signal molecule, Forms of intracellular signalling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine, Tissue level of organization Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissues.

Integumentary system Structure and functions of skin • Skeletal system Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction 10 hours 29 • Joints Structural and functional classification, types of joints movements and its articulation.

Body fluids and blood: Body fluids, composition and functions of blood, hemopoiesis, formation of hemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors, transfusion, its significance and disorders of blood, Reticulo endothelial system. • Lymphatic system Lymphatic organs and tissues, lymphatic vessels, lymph circulation and functions of lymphatic system Unit IV 08 hours Peripheral nervous system: Classification of peripheral nervous system: Structure and functions of sympathetic and parasympathetic nervous system. Origin and functions of spinal and cranial nerves. • Special senses Structure and functions of eye, ear, nose and tongue and their disorders. Unit V 07 hours • Cardiovascular system Heart – anatomy of heart, blood circulation, blood vessels, structure and functions of artery, vein and capillaries, elements of conduction system of heart and heart beat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram and disorders of heart.

Unit II PHARMACEUTICAL ANALYSIS: Pharmaceutical analysis- Definition and scope i) Different techniques of analysis ii) Methods of expressing concentration iii) Primary and secondary standards. iv) Preparation and standardization of various molar and normal solutions- Oxalic acid, sodium hydroxide, hydrochloric acid, sodium thiosulphate, sulphuric acid, potassium permanganate and ceric ammonium sulphate (b)Errors: Sources of errors, types of errors, methods of minimizing errors, accuracy, precision and significant figures (c)Pharmacopoeia, Sources of impurities in medicinal agents, limit tests. • Acid base titration: Theories of acid base indicators, classification of acid base titrations and theory involved in titrations of strong, weak, and very weak acids and bases, neutralization curves • Non aqueous titration: Solvents, acidim

etry and alkalimetry titration and estimation of Sodium benzoate and Ephedrine HCl • Precipitation titrations: Mohr's method, Volhard's, Modified Volhard's, Fajans method, estimation of sodium chloride. • Complexometric titration: Classification, metal ion indicators, masking and demasking reagents, estimation of Magnesium sulphate, and calcium gluconate. • Gravimetry: Principle and steps involved in gravimetric analysis. Purity of the precipitate: co-

precipitation and post precipitation, Estimation of barium sulphate. • Basic Principles, methods and application of diazotisation titration.

Unit III Electrochemical methods of analysis: Conductometry- Introduction, Conductivity cell, Conductometric titrations, applications. • Potentiometry - Electrochemical cell, construction and working of reference (Standard hydrogen, silver chloride electrode and calomel electrode) and indicator electrodes (metal electrodes and glass electrode), methods to determine end point of potentiometric titration and applications. • Polarography - Principle, Ilkovic equation, construction and working of dropping mercury electrode and rotating platinum electrode, applications.

Unit IV Hospital and its organization Definition: Classification of hospital- Primary, Secondary and Tertiary hospitals, Classification based on clinical and non- clinical basis, Organization Structure of a Hospital, and Medical staffs involved in the hospital and their functions. b) Hospital pharmacy and its organization Definition, functions of hospital pharmacy, Organization structure, Location, Layout and staff requirements, and Responsibilities and functions of hospital pharmacists. c) Adverse drug reaction Classifications - Excessive pharmacological effects, secondary pharmacological effects, idiosyncrasy, allergic drug reactions, genetically determined toxicity, toxicity following sudden withdrawal of drugs, Drug interaction- beneficial interactions, adverse interactions, and pharmacokinetic drug interactions, Methods for detecting 149 drug interactions, spontaneous case reports and record linkage studies, and Adverse drug reaction reporting and management. d) Community Pharmacy Organization and structure of retail and wholesale drug store, types and design, Legal requirements for establishment and maintenance of a drug store, Dispensing of proprietary products, maintenance of records of retail and wholesale drug store.

Unit V Microbiology: Laboratory diagnosis, Biosafety measures, Examination of stool, Quality control **Immunology:** Antigens and Antibodies, Types of Antigens.

Section-B

30 Marks

Unit A	General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment, General awareness of Haryana etc
Unit B	Questions on Mathematics of matriculation standard- Number system, simplification, decimals, corrections, simple and compound interest, percentage, average, profit and loss, discount, mensuration, Time & work and time & distance etc.
Unit C	English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc
Unit D	Questions on Reasoning
Unit E	Questions on analytical Ability