

BP404T. PHARMACOLOGY-I(Theory)

45 Hours

Course Content:

Unit-I

08 hours

General Pharmacology

Introduction to Pharmacology- Definition, historical landmarks and scope of pharmacology, nature and source of drugs, essential drugs concept and routes of drug administration, Agonists, antagonists (competitive and noncompetitive), spare receptors, addiction, tolerance, dependence, tachyphylaxis, idiosyncrasy, allergy.

Pharmacokinetics- Membrane transport, absorption, distribution, metabolism and excretion of drugs. Enzyme induction, enzyme inhibition, kinetics of elimination.

Unit-II

12 Hours

General Pharmacology

Pharmacodynamics- Principles and mechanisms of drug action. Receptor theories and classification of receptors, regulation of receptors. drug receptors interactions signal transduction mechanisms, G-protein–coupled receptors, ion channel receptor, transmembrane enzyme linked receptors, transmembrane JAK-STAT binding receptor and receptors that regulate transcription factors, dose response relationship, therapeutic index, combined effects of drugs and factors modifying drug action.

Adverse drug reactions.

Drug interactions (pharmacokinetic and pharmacodynamic).

Drug discovery and clinical evaluation of new drugs -Drug discovery phase, preclinical evaluation phase, clinical trial phase, phases of clinical trials and pharmacovigilance.

Unit-III

10 Hours

Pharmacology of drugs acting on peripheral nervous system

Organization and function of ANS.

Neurohumoral transmission, co-transmission and classification of neurotransmitters.

Parasympathomimetic, Parasympatholytic, Sympathomimetics, sympatholytic.

Neuromuscular blocking agents and skeletal muscle relaxants (peripheral).

Local anesthetic agents.

Drugs used in myasthenia gravis and glaucoma.

Unit-IV

08 Hours

Pharmacology of drugs acting on central nervous system

Neurohumoral transmission in the CNS special emphasis on importance of various neurotransmitters like with GABA, Glutamate, Glycine, serotonin, dopamine.

General anesthetics and pre-anesthetics.
Sedatives, hypnotics and centrally acting muscle relaxants.
Anti-epileptics.
Alcohols and disulfiram.

Unit-V

07 Hours

Pharmacology of drugs acting on central nervous system

Psychopharmacological agents: antipsychotics, antidepressants, anti-anxiety agents, antimanics and hallucinogens.
Drugs used in Parkinson's disease and Alzheimer's disease.
CNS stimulants and nootropics.
Opioid analgesics and antagonists.
Drug addiction, drug abuse, tolerance and dependence.