St.James College of Pharmaceutical Sciences St.James medical Academy River Bank, Chalakudy			
Programme:	B.PHARM	Sem.:	IV
Name of Course: (*Subject*)	BP 404 T. PHARMACOLOGY-I	Course Code:	BP404T
Teaching faculty of the course	ANN SHINE PAUL, ASST. PROFESSOR, DEPT. OF PHARMACOLOGY		

Summary of the Lecture Plan

Topic	Lectures	Hours
I. General Pharmacology	**a.** 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 non competitive), spare receptors, addiction, tolerance, dependence, tachyphylaxis, idiosyncrasy, allergy. **b.** Pharmacokinetics- Membrane transport, absorption, distribution, metabolism and excretion of drugs .Enzyme induction, enzyme inhibition, kinetics of elimination	08
II. General Pharmacology	a. 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. b. Adverse drug reactions. c. Drug interactions (pharmacokinetic and pharmacodynamic) d. Drug discovery and clinical evaluation of new drugs -Drug discovery phase, preclinical evaluation phase, clinical trial phase, phases of clinical trials and pharmacovigilance.	12
III. Pharmacology of peripheral nervous system	a. Organization and function of ANS. b.Neurohumoral transmission,co-transmission and classification of neurotransmitters. c. Parasympathomimetics, Parasympatholytics, Sympathomimetics, sympatholytics. d. Neuromuscular blocking agents and skeletal muscle relaxants (peripheral). e. Local anesthetic agents. f. Drugs used in myasthenia gravis and glaucoma	10
IV. Pharmacology of central nervous	a. Neurohumoral transmission in the C.N.S.special emphasis on importance of various	08

system	neurotransmitters like with GABA, Glutamate, Glycine, serotonin, dopamine. b. General anesthetics and pre-anesthetics**.** c. Sedatives, hypnotics and centrally acting muscle relaxants. d. Anti-epileptics e. Alcohols and disulfiram	
v. Pharmacology of central nervous system	a. Psychopharmacological agents: Antipsychotics, antidepressants, anti-anxiety agents, anti-manics and hallucinogens. b. Drugs used in Parkinsons disease and Alzheimer's disease. c. CNS stimulants and nootropics. d. Opioid analgesics and antagonists e. Drug addiction, drug abuse, tolerance and dependence.	07

Major issues or Core aspects to be addressed/ covered:

I. **General Pharmacology**
Introduction to Pharmacology, historical landmarks and scope of pharmacology
nature and source of drugs, essential drugs concept
routes of drug administration
Agonists, antagonists (competitive and non competitive), spare receptors, addiction, tolerance, dependence, tachyphylaxis, idiosyncrasy, allergy
Pharmacokinetics- absorption, distribution, metabolism and excretion, and its factors
Enzyme induction, enzyme inhibition, kinetics of elimination
II. **General Pharmacology**
Types of receptors including G-protien, jak stat, DRC, therapeutic index and parameters
Adverse drug reactions: different types and mechanism
pharmacokinetic and pharmacodynamic Drug interactions
Drug discovery and clinical evaluation of new drugs -Drug discovery phase
preclinical evaluation phase, phases of clinical trials & pharmacovigilance
III. Pharmacology of peripheral nervous system
Organization and function of ANS, Neurohumoral transmission,co-transmission and classification of neurotransmitters.
Parasympathomimetics, Parasympatholytics, Sympathomimetics, sympatholytics classifications, pharmacology of acetyl choline, atropine, adrenaline, beta and alpha blockers, cholinergic and adrenergic recptors.
Neuromuscular blocking agents and skeletal muscle relaxants (peripheral) classification and pharmacology of succinyl choline
Local anesthetic agents classification, uses of LA
Drugs used in myasthenia gravis
Glaucoma- types and drugs used in both conditions
Mydriatic and miotic agents

IV. Pharmacology of central nervous
Neurohumoral transmission in the C.N.S like with GABA, Glutamate, Glycine, serotonin, dopamine.
General anesthetics and pharmacology of lignocaine, drugs used as preanaesthetics
Sedatives& hypnotics – classification, pharmacology of barbiturates and benzodiazepines, mechanism of action of other drugs, barbiturate poisoning, centrally acting muscle relaxants and their actions
Anti-epileptic classification, pharmacology of phenytoin
Methanol, ethanol and flumazenil, disulfiram
v. Pharmacology of central nervous system
Psychopharmacological aspects of Antipsychotics, antidepressants, anti-anxiety agents, anti-manics and hallucinogens and pharmacology.
Parkinsons and Alzheimer's disease- classification of drus and its pharmacology
CNS stimulants and nootropics, piractam
Opioid analgesics and antagonists, opioid receptors, treatment in poisoning
Drug addiction, drug abuse, tolerance and dependence.

Sample Questions

I. **General Pharmacology**
Different routes of administrations with advantages and disadvantages
Scope of pharmacology
Metabolism reactions with examples
Enzyme induction and inhibition with examples
Factors affecting absorption
Note on spare receptors
II. **General Pharmacology**
Note on types and mechanisms of ADR
Pharmacokinetic drug interactions with examples
Phases of drug discovery and clinical trials
pharmacovigilance
III. Pharmacology of peripheral nervous system
Cholinergic and adrenergic neurotransmission with diagram
Beta blocker classification, its pharmacology and uses
Skeletal muscle relaxant classification and write down the pharmacology of succinyl choline
Uses of local anaesthetics
Myasthenia gravis
Mydriatics and miotics
IV. Pharmacology of central nervous

Note on preanaesthetic medications
Pharmacology of barbiturates
Pharmacology of benzodiazepines
Ethanol poisoning and its treatment
v. Pharmacology of central nervous system
Opioid receptors
Drugs in alzhemers disease
Classification of antiparkinsons disease
Mechanism of action and uses of lithium