

# LJ UNIVERSITY

## LJ INSTITUTE OF PHARMACY

### SEMESTER: VI

**Subject Name: PHARMACOLOGY IV**

**Subject Code: BP604TP**

**Scope:** This subject is intended to impart the fundamental knowledge on various aspects of pathophysiology (Definition of disease, epidemiology, pathophysiology, diagnosis, treatment, management) and pharmacology (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body

**Objectives:** Upon completion of the course the student shall be able to

1. Understand the pharmacological actions of different categories of drugs
2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels
3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.
4. Observe the effect of drugs on animals by simulated experiments
5. Appreciate correlation of pharmacology with other bio medical sciences

**Teaching scheme and examination scheme:**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	1	4	8	75	25	35	15

Module	Course Contents	Hours
1	<b>1.1 General Chemotherapy :</b> General principles of chemotherapy. <b>1.2 Sulfonamides and cotrimoxazole.</b> <b>1.3 Antibiotics-</b> Penicillins, cephalosporins, chloramphenicol, macrolides, quinolones and fluoroquinolins, tetracycline and aminoglycosides	10
2	<b>2.1. Pathophysiology &amp; Pharmacology of drugs acting on Infectious Disease:</b> TB and Antitubercular agents, Leprosy and Antileprotic agents, Malaria and Antimalarial drugs, Antifungal agents, Antiviral drugs, Anthelmintics, Antiamoebic agents <b>2.2. Pathophysiology &amp; Pharmacology of drugs acting on Infectious Disease:</b> Meningitis and its treatment, Typhoid and its treatment, Urinary tract infection and its treatment	15
3	<b>3.1. Pathophysiology &amp; Pharmacology of drugs acting on Sexual Transmitted Disease:</b> AIDS and Treatment of AIDS, Syphilis and drugs for syphilis, Gonorrhea and drugs for Gonorrhea	03
4	<b>4.1 Principles of Malignancy and its treatment</b>	07
5	<b>5.1 Principles of toxicology:</b> Definition and basic knowledge of acute, subacute and chronic toxicity, Definition and basic knowledge of genotoxicity, carcinogenicity, teratogenicity and mutagenicity, General principles of treatment of poisoning, Clinical symptoms and management of barbiturates, morphine, organophosphorus compound and lead, mercury and arsenic poisoning	5
6	<b>6.1 Pathophysiology and Pharmacology of drugs acting on Urinary system:</b> Acute and Chronic Renal Failure and their treatment <b>6.2 Pharmacology of drugs acting on Urinary system:</b> Diuretics and Anti-diuretics	5
Total Hours		

# **Practical**

1. Study of anti-ulcer activity of a drug using pylorus ligand (SHAY) rat model and NSAIDS induced ulcer model.
2. Study of effect of drugs on gastrointestinal motility
3. Effect of agonist and antagonists on guinea pig ileum
4. Effect of saline purgative on frog intestine
5. Insulin hypoglycemic effect in rabbit
6. Test for pyrogens (rabbit method)
7. Estimation of serum biochemical parameters by using semi- autoanalyser
8. Determination of acute oral toxicity (LD50) of a drug from a given data
9. Calculation of pharmacokinetic parameters from a given data
10. Biostatistics methods in experimental pharmacology ( student's t test, ANOVA)
11. Biostatistics methods in experimental pharmacology (Chi square test, Wilcoxon Signed Rank test)
12. Case Study of Infectious Disease (Minimum 2).
13. Case Study of Malignancy (Minimum 2).
14. Case Study of Urinary system (Minimum 2).

## **Study of Diuretic activity of drugs using rats/mice.**

### **Recommended Books (Latest Editions)**

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchill Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics
4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs. The Point Lippincott Williams & Wilkins
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology
6. K.D.Tripathi. Essentials of Medical Pharmacology, , JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.
7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
8. Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert, Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata,
9. Kulkarni SK. Handbook of experimental pharmacology. VallabhPrakashan,
10. N.Udupa and P.D. Gupta, Concepts in Chronopharmacology