3.5 PHARMACOLOGY (THEORY)
75 hours ; 3 hours/week


15 hours;15-19 marks

2. **Pharmacology of drugs acting on Autonomic Nervous System**: Introduction — Neurohumoral Transmission. Adrenergic Drugs ; Adrenergic transmission, adrenergic receptors and drugs affecting adrenergic transmission, Classification of drugs and mechanism of action, Pharmacology of adrenaline (a prototype adrenergic drug) and salient features of other adrenergic drugs. Adrenergic Blockers; Classification, pharmacology of phenoxybenzamine (a prototype Alpha blocker), pharmacology of propranolol (a prototype beta blocker), salient features of alpha & beta blockers. Adrenergic neuronal blockers & mechanism of action. Cholinergic Drugs: Cholinergic transmission, cholinergic receptors and drugs affecting cholinergic transmission, Classification of drugs and mechanism of action, Pharmacology of Acetylcholine (a prototype cholinergic drug). Salient features of other cholinergic drugs, including cholinesterase inhibitors and enzyme reactivators. Anti cholinergic Drugs; Pharmacology of atropine (a prototype anti cholinergic drug) and salient features of other anti cholinergic drugs; Ganglionic blockers and stimulants, Neuromuscular blocking agents and drugs used in myasthenia gravis.  

19 hours;16-20 marks

3. **Pharmacology of Drugs acting on Cardiovascular System**: Anti- hypertensives agents: Classification and mechanism of action, Pharmacology of centrally acting drugs (Clonidine and methylldopa), Classification of vasodilators including calcium channel blockers, Pharmacology of drugs affecting Renin Angiotensin system. Anti - anginal drugs; Classification and pharmacology of anti -anginal drugs. Anti-arrhythmic drugs; Classification and mechanism of action, Pharmacology of quinidine (A proto type sodium channel blocker), Salient features of other anti-arrhythmic drugs, Drugs used for therapy of congestive cardiac failure (CCF); Classification and mechanism of action of drugs used for CCF, pharmacology of digoxin, Salient features of other drugs used in CCF. Drugs used in treatment of hyperlipidaemias; Classification and mechanism of action of anti- hyperlipidaemics, Pharmacology of atorvastatin (A proto type of HMG CoA reductase inhibitor), Salient features of other anti- hyperlipidaemic agents.  

14 hours; 12-14 marks

4. **Pharmacology of Drugs Acting on Renal System (Diuretics) and antidiuretics**: Classification and mechanism of action of diuretics, Pharmacology of furosemide, Salient features of other diuretics, Pharmacology of anti-diuretics, Uses and adverse effects of Urine acidifiers and alkalinizers.  

3 hours;5-7 marks

5. **Pharmacology of Drugs Acting on Blood and Blood forming Agents**: Classification and mechanism of action & salient features of coagulants and anti-coagulants, haemopoietics, thrombolytics and antiplatelet agents.  

4 hours;5-7 marks

7. Pharmacology of Drug Acting on Respiratory Tract: Drugs used in asthma and COPD, mucolytics, expectorants, antitussives, nasal decongestants.


4 hours;5-7 marks

3 hours;2-4 marks

13 hours;10-12 marks
PHARMACOLOGY (PRACTICALS)
75 hours ; 3 hours/week

1. Regulatory perspectives of animal experiments with special reference to CPCSEA guidelines.
2. Study of laboratory animals and their handling.
4. Study of laboratory appliances used in experimental pharmacology.
5. Study of use of anesthetics in lab animals. *
6. Study of techniques of euthanasia in lab animals.*
7. To study the routes of administration of drugs.*
8. To study the absorption of glucose/drugs using everted gut sac from rat/chick.*
9. To study the in vitro protein binding and displacement of bound drug using egg albumin.*
10. To record the dose response curve of histamine using isolated guinea pig/chick/rat ileum preparation.*
11. Study of agonistic effects of histaminergic drugs using isolated guinea pig /chick/rat ileum preparation. **
12. Study of antihistaminic drugs using isolated guinea pig /chick/rat ileum preparation. **
13. To record the dose response curve of acetylcholine using isolated guinea pig/chick/rat ileum preparation.*
15. Study of anticholinergic drugs using isolated guinea pig /chick/rat ileum preparation. **
16. Simulated experiments on effects of drugs on isolated heart of frog.*
17. Simulated experiments on effects of drugs on hypodynamic heart of frog.*
18. Simulated experiments on effects on B.P, HR and RR of dog.*
19. Simulated experiments on effects of mydriatic and miotic drugs on rabbit's eye. *
20. Simulated experiments on effects of local anaesthetic drugs on rabbit's eye. *
21. Simulated experiments on effects of drugs on ciliary motility of frog's esophagus. *

Note: ** Denotes major experiments           * Denotes minor experiments

SCHEME OF EXAMINATION

1. Identification - 10 Marks
2. Synopsis - 10 Marks
3. Major Experiment - 25 Marks
4. Minor Experiment - 15 Marks
5. Viva - 10 Marks

Total = 70 Marks
PHARMACOLOGY TEXT BOOKS


PHARMACOLOGY REFERENCE BOOKS


LIST OF MINIMUM EQUIPMENT REQUIRED (For a batch of 20 students)

1. Pharmacology appliances Sufficient
2. Sherrington’s Kymograph Machine 20
3. Sherrington’s Drum 20
4. Perspex bath assembly (single unit) 20
5. Aerators 20
6. Dissection trays 20
7. Dissection boards 20
8. Haemostatic arterial forceps 20
9. Hypodermic syringes and needles of size 18, 24, 26G 20
10. Computers 10
11. LCD Projector 01
12. Software package for experiments 01
13. Standard graphs for various drugs Sufficient
14. Levers 20
15. Cannulae 20