PHARMACOLOGY & TOXICOLOGY

Theory (75 hours)

1. Introduction to Pharmacology, scope of Pharmacology.
2. Routes of administration of drugs, their advantages and disadvantages.
3. Various processes of absorption of drugs and the factors affecting them, Metabolism, distribution and excretion of drugs.
4. General mechanism of drugs action and the factors which modify drug action.
5. Pharmacological classification of drugs. The discussion of drugs should emphasise the following aspect:

(i) Drugs acting on the Central Nervous System:

(a) General anaesthetics, adjunction to anaesthesia, intravenuous Anasesthetics.

(b) Analgesic antipyretics and non-steroidal anti -inflammatory drugs, Narcotic analgesics, Antirheumatic and antigout remedies, Sedatives and Hypnotics, Psychopharmacological agents, anti convulsants, analeptics.

(c) Centrally acting muscle relaxants and anti parkinsonism agents

(ii) Local anaesthetics.

(iii) Drug acting on autonomic nervous system.

(a) Cholinergic drug, Anticholinergic drugs, anti cholinesterase drugs.

(b) Adrenergic drugs and adrenergic receptor blockers.

(c) Neurones blockers and ganglion blockers.

(d) Neuromuscular blockers, drugs used in myasthenia gravis.

(iv) Drugs acting on eye, mydriatics, drugs used in glaucoma.

(v) Drugs acting on respiratory system-Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents.

(vi) Antacids, Physiological role of histamine and serotonin, Histamine and Antihistamines, Prostaglandins.

(vii) Cardiovascular drugs, Cardiotonics, Antiarrhythmic agents, Antianginal agents, Antihypertensive agents, Peripheral Vasodilators and drugs used in

atherosclerosis.

(viii) Drugs acting on the blood and blood forming organs. Haematinics, Coagulants and anti Coagulants, Haemostatics, Blood substitutes and plasma expanders.

(ix) Drugs affecting renal function-Diuretics and antidiuretics.

(x) Hormones and hormone antagonists-hypoglycemic agents, Antithyroid drugs, sex hormones and oral contraceptives, corticosteroids.

(xi) Drugs acting on digestive system-Carminatives, digestants Bitters, Antacids and drugs used in Peptic ulcer, purgatives, and laxatives, Antidiarrhoeals, Emetics, Antiemetics, and Anti-spasmodics.

6. Chemotherapy of microbial disease ;Urinary antiseptics, Sulphonamides, Penicillins, Streptomycin, Tetracylines and other antibiotics, Antitubercular agents, Antifungal agents, antiviral drugs, antileprotic drugs.
7. Chemotherapy of protozoal diseases Anthelmintic drugs.
8. Chemotherapy of cancer.
9. Disinfectants and antiseptics.

A detailed study of the action of drugs on each organ is not necessary.

PHARMACOLOGY PRACTICAL

(50 hours)

The first six of the following experiments will be done by the students while the remaining will be demonstrated by the teacher.

1. Effect of K^+, Ca^{++}, acetylcholine and adrenaline on frog's heart.
2. Effect of acetylcholine on rectus abdominis muscle of Frog and guinea pig ileum.
3. Effect on spasmogens and relaxants on rabbits intestine.
4. Effect of local anaesthetics on rabbit cornea.
5. Effect of mydriatics and miotics on rabbits eye.
6. To study the action of strychnine on frog.
7. Effect of digitalis on frog's heart.
8. Effect of hypnotics in mice.
9. Effect of convulsants and anticonvulsant in mice or rats.
10. Test for pyrogen.
11. Taming and hypnosis potentiating effect of chlorpromazine in mice/rats.
12. Effect of diphenhydramine in experimentally produced asthma in guinea pigs.