

VEER NARMAD SOUTH GUJARAT UNIVERSITY

Third Year B. Sc. (SEM –V)

Chemistry - Generic elective subject - DRUGS

70 Marks (External)

30 Marks (Internal)

Total : 45 Hrs

Time : 3 Hrs. (Uni. Exam)

UNIT-I

Topic-1 : Drugs : Classifications-Terminology.

9 Hrs

Definition of the term drug, Drugs obtained from plants, Different class of the drugs.

Explanation of the following terms: Agonist, Antagonist, Receptors, Pharmacophore, Prodrug, Softdrug, CNS depressants, CNS stimulants, Quantitative structural activity relationship (QSAR), Mode of action. Brief accounts of the following agents giving the name and structures of two important drugs in each case (1) Antifungal agents (2) Antiviral agents (3) Anti cancer or Cytotoxic drugs (4) Non Steroidal Anti Inflammatory Drugs (NSAIDS).

UNIT-II

Topic-1 : Micro-organism and Diseases.

9 Hrs

Brief account of microbes: Bacteria, Fungi, Protozoa, Virus.

Classification of the bacteria based on shape and staining and Iehl-Neelson staining.

Names of at least two diseases in case of each of the following types of infection and also the name of microbes responsible for the same: (1) Respiratory tract infections (2) Gastro intestinal tract infections (3) Urinary tract infections (4) Urethritis and sexually transmitted diseases (5) Skin and soft tissue infections (6) Cardio vascular system infections (7) Central nervous system infections.

Name of important drug for each of the following diseases: (1) Typhoid (2) Dysentery (3) Pneumonia (4) Meningitis (5) Gastroenteritis (6) Actinomycosis.

UNIT-III

Topic-1 : Antibiotics.

9 Hrs

Definition, History of discovery of penicillin, Structural variations in penicillin, Broad spectrum antibiotics and their therapeutic uses, sources, structural formula and therapeutic uses of Streptomycin, Tetracycline and Cycloseries, Chloroamphenicol and Some recent antibiotics.

UNIT-IV

Topic-1 : Sulphad rugs.

9 hrs

History of discovery and development of sulphad rug, Structural variations among sulphonamides, mode of action of Sulphonamides, therapeutics uses and antimicrobials activity of sulphonamides.

Synthesis and uses of : Sulphadimidine, Sulphaguanidine, Sulfisoxazole(sulpha furazol), Sulphaacetamide, Succinyl sulphathiazole and Sulphanilamide.

UNIT-V

Topic-1 : Coagulants and Anti coagulants

9 Hrs

Definition, water fall mechanism of blood clotting, Fibrin-Fibrinogen, thrombin prothrombin role of calcium in blood clotting.

Classification and structural variations.

Blood coagulants, Vitamin k group as blood coagulants. Synthesis and uses of Warfarin, Dicoumarol, Bromindione.

Reference Books:

1. May's Chemistry of synthetic Drugs by Dyson.
2. Chemistry of drugs , Ener and Caldwell
3. Synthetic drugs by Tyagi and Yadav.
4. Synthetic Drugs by G. R. Chatwal, Himalaya Publishers.
5. The Organic Chemistry of Drug Synthesis by Daniel Lednicer & L.A.Mitscher
6. Drugs by V.K.Ahluwalia Pub. Ane Books Pvt. Ltd.
7. Medicinal Chemistry by Balkishan Razdan, Pub. CBS Publishers.

8. Pharmaceutical Organic Chemistry by S.K.Dewan, Pub. Narosa
9. Medicinal Chemistry - a Molecular and Biochemical Approach, by Thomas Nogrady & Donald F Weaver
10. Pharmaceutical Organic Chemistry by Shyam Singh Pub. Himalaya Publishers
11. Medicinal Chemistry by G Patrick. Pub. Viva Books.
12. Burger's Medicinal Chemistry & Drug Discovery. Ed. by D.J. Abraham.