ST.JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

VIII SEMESTER B.Sc. HONOURS CHEMISTRY Time:4hrs/week

Code CH8204(3) Revised Syllabus Under CBCS 2020-21 Marks: 100

Pharmaceutical and Medicinal Chemistry

I.

Course Objective: To introduce students to the terminology, classification and synthesis of different categories of drugs

Course Outcomes: On successful completion of this practical course, student shall be able to:

- Know the **Terminology in Pharmaceutical chemistry**.
- **Classification of Pharmaceutical chemistry**
- Learn the procedure for **Synthesis and therapeutic activity of the compounds**.
- Acquire knowledge on **Pharmacodynamics and Anesthetics Drugs**
- Acquire knowledge on **HIV-AIDS and Drugs.**

II. Syllabus:

UNIT-I

Pharmaceutical chemistry Terminology: Pharmacy, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics (ADME, Receptors - brief treatment), Metabolites and Anti metabolites. Nomenclature: Chemical name, Generic name and trade names with examples.

UNIT-II

Classification: Classification based on structures and therapeutic activity with one example each, Administration of drugs. Absorption of drugs - factors affecting absorption of drugs, routes of administration - local, enema, oral and external, parental routes - advantages and disadvantages.

UNIT-III

Synthesis and therapeutic activity of the compounds: 12hours

a. Chemotheraputic Drugs

l. Sulpha drugs (Sulpha methoxazole) 2.Antibiotics - β-Lactam Antibiotics, MacrolideAntibiotics,

3. Anti malarial Drugs(chloroquine)

b. Psycho therapeutic Drugs:

1.Anti pyrectics (Paracetamol) 2. Hypnotics, 3.Tranquilizers(Diazepam) 4.Levodopa

UNIT-IV

Pharmacodynamics and Anesthetics Drugs: 12hours

1. Antiasthma Drugs (Salbutamol)

2. Antianginals (Glyceryl Trinitrate)

3. Diuretics(Furosemide)

4. Anesthetics - general - ether, chloroform, ethyl chloride, halothane, nitrous oxide, local - esters - cocaine, benzo cocaine.

UNIT-V

HIV-AIDS: 12 hours

Immunity - CD-4cells, CD-8cells, Retro virus, Replication in human body, Investigation available, prevention of AIDS, Drugs available - examples with structures: PIS: Indinavir (crixivan), Nelfinavir (Viracept), AZT- Zidovudine.

III. Co-Curricular Activities:

a. Training of students by related industrial experts.

b. Assignments, Seminars and Quiz (on related topics), collection of relevant videos and material.

c. Visits of related Industries/firms, research organizations etc.

d. Invited lectures and presentations on related topics by field/industrial experts.

IV. List of Text Books:

1. Synthetic Drugs by O.D.Tyagi & M.Yadav3.Medicinal Chemistry by Ashutoshkar
2. Medicinal Chemistry by P.Parimoo
3. Pharmacology& Pharmacotherapeutics R.S Satoshkar & S.D.Bhandenkar

4. Medicinal Chemistry by Dr. B.V.Ramana
5. Synthetic Drugs by O.D.Tyagi & M.Yadav3.Medicinal Chemistry by Ashutoshkar
6. Medicinal Chemistry by P.Parimoo
7. Pharmacology& Pharmacotherapeutics R.S Satoshkar & S.D.Bhandenkar
8. Medicinal Chemistry by Kadametal P-I & P.II
9. European Pharmacopoeia.