**DEPARTMENT OF CHEMISTRY**

**SHRI G. S. INSTITUTE OF TECHNOLOGY AND SCIENCE, INDORE**

**COURSE COMPLETION UNIT PLAN**

**Course: M.Sc. (Applied Chemistry) Semester III**

**Paper: 91306 Chemistry of Drug -II**

**Name of Faculty: Dr. Nitish Gupta**

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| **Lecture No.** | **Brief description of Topic to be taught** | **Reference/Remarks** |
|  | **Unit I**  **Analgesic, antipyretic, antiinflammory and Sedatives and hypnotics** | (1) May’s, Chemistry of Synthetic Drugs. (UNODC Publications).  (2) William Foye, Principles of Medicinal Chemistry. (Varghese & Co.).  (3) Berger J, Medicinal Chemistry.(John Willy & sons).  (4) Chatwal G.R., Chemistry of natural products Vol I & II Chemistry of Synthetic Drugs. (Himalaya Publishing House).  ( 5) Lednicer D. & Lester A. Mitscher Organic Chemistry of Drug Synthesis., (John Willy & sons).  (6) Satoskar R.S. Medicinal Chemistry(India Popular Prakashan).  **Journals:**  1. Journal of Cardiovascular Disease Research.  2. Journal of Malaria Research.  3. Pharmacology of Antihistamines.  4. International Journal of Impotence Research .  5. Antidepressants: MedlinePlus. |
| 1 | Introduction, classification and general mode of action of analgesic, antipyretic and antiinflammory. |
| 2 | Introduction, chemical synthesis, properties, mechanism of action and sar of acetaminophen, amidopyrine, antipyrine and oxyphenabutazone. |
| 3 | Introduction, chemical synthesis, properties, mechanism of action and sar of phenyl butazone, pethidine, ibuprofen, ketoprofen, mefenamic acid. |
| 4. | Introduction, chemical synthesis, properties, mechanism of action and sar of fulfenamic acid, diclofenac sodium. (Alclafenac). piroxicam and nimesulide. |
| 5. | Introduction, classification, chemical synthesis, properties, mechanism of action and sar of barbiturates and barbital. |
| 6 | Introduction, chemical synthesis, properties, mechanism of action and sar of acyclic ureides, carbonal , cyclic imides and amides. |
| 7 | Chemical synthesis, properties, mechanism of action and sar of benzodiazepines, glycol and its derivatives. |
| 8 | Chemical synthesis, properties, mechanism of action and sar of oxazole derivatives. |
|  | **Unit-II**  **Antidepressants, Antianxiety, Tranquilizers, Anticonvulsants and Antiemetics Agents** |
| 9 | Introduction and classification of antidepressant, chemical synthesis, properties, mechanism of action and sar of phenyl ethylamine analogues. |
| 10 | Chemical synthesis, properties and sar of monoamine oxidase inhibitors and tricyclic antidepressants. |
| 11 | Introduction, classification and general mechanism of action of transquilizer. |
| 12 | Chemical synthesis, properties, uses, moa and sar of phenothiazines and benzoquinolizines. |
| 13 | Introduction and classification of anticonvulsant, chemical synthesis, properties, mechanism of action and sar of hydantoins and oxazolidine-diones. |
| 14 | Chemical synthesis, properties, uses, moa and sar of succinimides, primidone, phenacemide. |
| 15 | Introduction, classification and general mechanism of action of antiemetics. |
| 16 | Chemical synthesis, properties, uses, moa and sar of Trimethobenzamide, diphenidol. |
|  | **Unit-III**  **Autonomic drugs** |
| 17 | Introduction of cholinergic agents, chemical synthesis, properties, uses, moa and sar of methacholine chloride,carbachol. |
| 18 | Chemical synthesis, properties, uses, moa and sar of edrophonium chloride, physostigmine, neostigmine, pyridostigmine. |
| 19 | Introduction of anticholinergic agents, chemical synthesis, properties, uses, moa and sar of dicyclomine, oxyphenonium bromide. |
| 20 | Chemical synthesis, properties, uses, moa and sar of isopropamide iodide, diphenhydramine. |
| 21 | Introduction of adrenergic agents, chemical synthesis, properties, uses, moa and sar of epinephrine and related compounds. |
| 22 | Chemical synthesis, properties, uses, moa and sar of ephedrine and related compounds and imidazoline derivatives. |
| 23 | Introduction of antihistamines, chemical synthesis, properties, uses, moa and sar of ethanolamine derivatives and ethylene diamines. |
| 24 | Chemical synthesis, properties, uses, moa and sar of alkylamines, phenothiazines and piperazines. |
|  | **Unit-IV**  **Diuretics, Antimalarials and Cardiovascular drugs** |
| 25 | Introduction and classification of Diuretics,classification, chemical synthesis, properties, uses, moa and sar of sulphonamides. |
| 26 | Classification, chemical synthesis, properties, uses, moa and sar of thiazides, sulphamyl benzoic acid derivatives. |
| 27 | Introduction and classification of Antimalarials, , chemical synthesis, properties, uses, moa and sar of 4-amino quinolines, 8-amino-quinolines. |
| 28 | Chemical synthesis, properties, uses, moa and sar of 9-amino-acridines, biguanides. |
| 29 | Chemical synthesis, properties, uses, moa and sar of pyrimidines and sulphones. |
| 30 | Introduction and classification of Cardiovascular drugs, , chemical synthesis, properties, uses, moa and sar of antianginals and vasodilators, antiarrythmic drugs. |
| 31 | Chemical synthesis, properties, uses, moa and sar of antihypertensive drugs, antihyperlipidemic agents. |
| 32 | Chemical synthesis, properties, uses, moa and sar of anticoagulants and antiplatelet drugs, sclerosing agents. |
|  | **Unit-V**  **Hypoglycaemic, Antineoplastic and Respiratory drugs** |
| 33 | Introduction, classification and general mode of action of Hypoglycaemic agents. |  |
| 34 | Chemical synthesis, properties, uses, moa and sar of sulphonyl ureas and biguanides. |
| 35 | Introduction, classification and general mode of action of Antineoplastic drugs, chemical synthesis, properties, uses, moa and sar of alkylating agents. |
| 36 | Chemical synthesis, properties, uses, moa and sar of anti metabolites and antineoplastic antibiotics. |
| 37 | Introduction, classification and general mode of action of Respiratory drugs. |
| 38 | Chemical synthesis, properties, uses, moa and sar of respiratory stimulants, antitussives. |
| 39 | Chemical synthesis, properties, uses, moa and sar of expectorants, mucolytics. |
| 40 | Chemical synthesis, properties, uses, moa and sar of decongestants antiasthmatics. |