

UNIVERSITY OF MADRAS
B.Sc. DEGREE COURSE IN CHEMISTRY
SYLLABUS WITH EFFECT FROM 2020-2021

BCY-DSE1A

ELECTIVE-I(A): PHARMACEUTICAL CHEMISTRY

Learning Outcome

Learning various terminologies in pharmacology; Types of drugs and their action

Semester	Subject Title	Total Hours	Credit
V	Pharmaceutical Chemistry	60	5

UNIT I (12 hrs)

Important terminologies used in pharmaceutical chemistry - drug pharmacology, pharmacognosy, pharmacodynamics, pharmacokinetics, antimetabolites, pharmacopeia (BP,IP,USP), National formulary, chemotherapy, vaccines, primary immunization, synergism, antagonist LD50, ED50, therapeutic index and drug dosage.

Various sources of drugs, pharmacologically active constituents in plants. Classification of drugs, chemical –biological - mechanism of drug action - action at cellular sites. Drug receptors and biological responses. Mechanism of different types of drug action.

UNIT II (12 hrs)

Absorption of drugs - factors affecting absorption of drugs, routes of administration - local, enema, oral and external, parental routes - advantages and disadvantages –
Common diseases - infective diseases insect borne - air borne and water borne. Common diseases of the respiratory system and nervous system.
Indian medicinal plants - tulsi, neem, keezhanelli. AIDS - symptoms and prevention.

UNIT III (12 hrs)

Anaesthetics - general - ether, chloroform, ethyl chloride, halothane, nitrous oxide, local - esters - cocaine, benzococaine, procaine, amides - lignocaine, cinchocaine. Analgesics - Narcotic and synthetic
Antipyretics and anti-inflammatory agents, Antibiotics - penicillin, streptomycin, chloramphenicol, tetracycline. Antiseptics and disinfectants - phenol and its derivatives, nitrofurans derivatives.

UNIT IV (12 hrs)

Composition of blood - blood grouping and matching. Blood pressure - systolic and diastolic - hypertensive drugs. Diabetes - causes - hyperglycemic drugs.
Cardiovascular drugs - cardiac glycosides - antiarrhythmic drugs, antianginal drugs, vasodilators, antipsychotic drugs - antidepressants - sedatives and hypnotics.

UNIT V (12 hrs)

Anticonvulsant agents - Barbiturates –oxazolinediones- acetyl urea derivatives - succinimides. Diagnostic agents for kidney function (aminohippuric acid) –for liver function (sulfobromophthalein). Lipid profile - HDL, LDL, cholesterol and lipid lowering drugs.
Vitamins - fat soluble and water soluble - sources, biological role and deficiency conditions.
Medicinal importance of inorganic compounds - compounds of aluminium - phosphorus - arsenic - mercury and Iron. Biological importance of inorganic compounds - sodium and its compounds - potassium and its compounds - copper and its compounds.

REFERENES

1. Jayashree Ghosh, A Text book of Pharmaceutical Chemistry, 5th ed., S Chand & Company Ltd., 2014.
2. Lakshmi S, Pharmaceutical Chemistry, S Chand & Sons, New Delhi, 1995.
3. Ashutosh Kar, Medicinal Chemistry, Wiley Eastern Ltd., New Delhi, 1993.
4. Hakishan, V.K. Kapoor, Medicinal and Pharmaceutical Chemistry, Vallabh Prakashan, 2012.