

BARKATULLAH UNIVERSITY, BHOPAL

SYLLABUS FOR ENTRANCE TEST

FOR ADMISSION IN M. PHARM. 2010-11

A

1. **Pharmaceutics**:-Gastrointestinal Absorption : Physiology of biological membrane, passage of drugs across biological barrier (passive diffusion, active transport, facilitated diffusion and pinocytosis). Physiological, physicochemical and pharmaceutical factors affecting absorption of drugs.

PREFORMULATION STUDIES

- (a) Study of physical properties of drug like physical form, particle size, shape, density, wetting, dielectric constant, solubility, dissolution and organoleptic properties; their effect on formulation, stability and bioavailability.
- (b) bioavailability and elegance of formulations.

Technology involved equipment, layouts, problem to be encountered, packaging and evaluation of following dosage forms Tablet, capsule, suspension, emulsion, parental, targeted drug delivery system, transdermal drug delivery system, aerosols

B

2. **Pharmacology**- classification, mechanism of action, therapeutic effects, side effects and contraindications of following classes of drugs general anesthetics, sedatives, hypnotics, diuretics Antibiotics – Beta-lactum (penicillin's & cephalosporins), Tetracycline, Aminoglycosides. . Chemotherapy of tuberculosis, Leprosy, viral diseases, Malaria.

C

3. **Pharmaceutical Chemistry**- local anesthetics, general anesthetics, sedative and hypnotics, steroids, diuretics (excluding all structure) .**ANTIBIOTICS**: Chemistry & biosynthesis of semi synthetic penicilins, Chloramphenicol and Tetracyclins. A study of properties and uses of Ampicillin, Kanamycin, Neomycin, Erythromycin, , Griseofulvin, Norfloxacin, Ciprioloxacin(excluding all structure)

-applications of UV, IR and mass spectroscopy, chromatography techniques like-TLC,HPLC, paper, column

D

4. **Biochemistry, Microbiology and Biotechnology**-. Biochemical organization of the cell. Production of ATP and its biological significance. antigen,

antibody, antigen-antibody reaction, hypersensitivity, enzyme kinetics, carbohydrate metabolism.

1. Microscopic examination of Microorganisms (electron microscope) character-, classification and identification of microorganisms like - Bacteria and Virus. A brief introduction of- fungi, spirochetes, rickettsia and Actinomycetes.
2. MONOCLONAL ANTIBODIES & HYBRIDOMA TECHNOLOGY: Formation and selection of hybrid cell. Production advantages. limitation characterization. Storage and applications of Monoclonal antibodies.
3. GENETIC RECOMBINATION: General procedure of Recombination different techniques of Genetic (DNA) Recombination application of Recombination DNA technology in different field . Gene cloning and its importance.

E

- 5. Pharmacognosy-** Systematic study of source, commercial varieties, chemical constituents, substitutes, adulterants, uses and specific chemical tests of following alkaloid containing drugs.

Pyridine-piperidine : Tobacco, Areca and Lobelia Tropane : Belladonna, Hyoscyamus, Datura, and Withania. Quinoline and isoquinoline : chinchona, ipecac, opium. Indole : ergot, rauwolfia, Vinca,.

Volatile oils: General methods of obtaining volatile oils, study of volatile oils from Mentha, Coriander, Cinnamon, Lemon grass, Sandal wood. Cardamom, Black pepper, Lemon, Anise, Orange peel, Caraway, Cumin, Dill, Clove, Fennel, Eucalyptus, Valerian, Nutmeg. .Study of the biological sources, commercial varieties, chemical constituents, substitutes, adulterants, uses and specific chemical tests of following groups of drugs containing glycosides :

- (a) **Saponins** : Glycyrrhiza, Ginseng, Dioscorea, (b) **Cardioactive steroids** : Digitalis, Squill, Strophanthus, Thevatia
- (c) **Anthraquinone cathartics** : Aloe, Senna, Rhubarb, Cascara and Cochineal.