Department of Pharmacy, Mohammad Ali Jauhar University, Rampur, U.P.

Syllabus for Ph.D. Entrance Test

Part-I

Research Methodology (Compulsory)

1. Basic concept of research problem • Rationale of research • Identification of research problem • Research objective • Types of research- fundamental/ applied/ action/ quantitative/ qualitative etc and research process.

2. Review of literatures • Primary source • Secondary source • Searching e- resources, using search engines • Searching data base • Writing literature review

3. Methods of research • Concept and formulation of hypothesis • Survey method Experimental method (variable, designs) • Historical methods.

4. Sampling of data • Concept of sampling • Probability sampling techniques Non probability sampling techniques • Sampling error.

5. Collection of data • Primary data generation • Secondary data collection Methods of data generation/ collection- by experiments, questionnaire, interview schedule & focus groups.

6. Analysis of data • Statistical analysis techniques • Qualitative analysis techniques Application of computer in research data analysis**.**

7. Report preparation • Structure and component of research report • Organization of data • Indexing of journal and research output • Citation, references, bibliography Copyright, plagiarism, originality of research work and basic of statistics / Statistical Inferences.

Part-II

Pharmaceutical Sciences (Core)

- Manufacturing standard and labeling of tablets, capsules, Aerosol, liquid orals, Ophthalmic and Parenteral preparations.
- Physical, Chemical and therapeutic incompatibilities and its rectification methods and principles.
- Different methods of sterilization and evaluation of sterile products, sterility testing of pharmaceutical products e.g. sera, vaccines.
- Particle size reduction; objective, mechanism involved and methods for particle size

reduction, factors affecting the P.S.R. mechanism.

- Collection, Processing and storage of various Blood products and plasma substitutions.
- Pharmaceutical Analysis: Principal and applications of UV/ visible spectroscopy, IR spectroscopy, NMR spectroscopy and chromatography.
- Chemotherapeutic agents: Structure, classification, Nomenclature, uses and Mechanism of action of Sulphonamide, Anti-cancerours agents, antibiotics and anti tuberculosis drugs.
- Pharmacotherapeutic agent: Structure, classification, Nomenclature, uses and mechanism of action of anti hypertensive, antidepressant and anxiolytic, diuretic, antihistaminic and analgesic.
- Brief Pharmacognostic characteristics of some plant-Seena, Digitalis, cinnamon, opium, clove, belladonna and Rouwolfia.
- Factors affecting variability of drugs phytoconstituents. Study of drugs containing: Carbohydrate, Alkaloids, and Glycosides.
- Identification, purity and quality evaluation of the plant drugs on basis of organoleptic, microscopic, physical, chemical and biological methods.
- Biological sources, preparation, identification tests, uses of the following enzymes: Hyaluronidase, Penicllinase, papsin, Trypsin etc.
- Central Nervous system: Anatomy and Physiology of ANS, Functions of different parts of Brain, reflux action, physiology of nerve impulses, neurotransmitters.
- General pharmacology: Routs of Drug administration, absorption, distribution, metabolism and excretion, molecular mechanism of drug action, theories of receptors, Dose response relationship.
- Chemotherapy of Malaria, leprosy, Viral and Fungal agents