Pharmacy - 2024 :

THE M.Phil./Ph.D. ENTRANCE TEST SYLLABUS

Syllabus for Part-A: Research Methodology 50×1=50

[Common to all subjects of faculty of Science (i.e.1. Physics 2. Mathematics 3. Statistics 4. Chemistry 5. Geology 6. Pharmacy)].

- Meaning of research, Objective of research, Types of research, Research approaches, Significance of research, Research methods versus research methodology, Research process, Criteria of good research.
- Research Problem, Selecting the problem, Necessity of defining the problem, Technique involved in defining problem.
- Meaning of Research Design, Need for Research Design, Feature of good Design, Important Concepts Relating to Research Design: Dependent and Independent variables, Extraneous Variable, Control, Confounded Relationship, Research Hypothesis, Experimental and Non-Experimental Hypothesis, Experimental and Control Groups, Treatments, Experiment, Experimental unit (s), Research Designs in Case of Exploratory Research Studies, Descriptive and Diagnostic Research Studies.

- Quantitative and Qualitative data, Classification of Measurement Scales: Nominal Scale, Ordinal Scale, Interval Scale, Ratio Scale. Goodness of Measurement Scale: Validity, Reliability and Practicality.

- Types of data: Primary and Secondary, Methods of Collecting Primary data: Observation method, Interview method, Collection of data through questionnaires, Collection of data through schedules, Difference between questionnaires and schedule, Collection of secondary data.

- Classification of data, Tabulation, Diagrammatic and Graphical representation of data: Bar chart, Pie chart, Box plot, Histogram, Frequency polygon, Frequency Curve, Ogive.

- Measure of Central Tendencies: Mean, Median, Mode .

  Measures of Variability: Range, Quartile Deviation, Standard Deviation and Coefficient of variation.

- Meaning of Correlation, Scatter diagram, Karl Pearson Coefficient of Correlation, Rank Correlation, Regression lines, Regression coefficients, Properties of regression coefficient. Normal Distribution and its Properties

- Testing of Hypothesis and Test of significance: Null and Alternative Hypothesis, Type I and Type II errors, Critical region, Level of significance, One-Tailed and Two- Tailed Tests, Large sample tests: Test of significance for single proportion, Difference of proportions, Single mean and difference of means, Chi –Square test of goodness of fit and independence of attributes. Small sample tests: t-test for single mean, t-test for difference between two sample means, Paired t-test for difference of means, F-test for equality of population variances.

- Analysis of Variance.

- Computer languages and Operating System(OS)-Assembly language, Machine language, MS-DOS and Windows.

- MS-Word and Power point presentation.

Institute of Pharmacy, Vikram University, Ujjain

SYLLABUS FOR Ph.D. ENTRANCE TEST IN PHARMACY (2024

Ordinance No. 11 (Doctor of Philosophy)

PART – B

50 Marks

Part - B shall also consist of 50 objective type compulsory questions of 1 mark each based on the syllabus of the subject at Masters Level as follows:

1. Pharmaceutics

Formulation and evaluation of various solid, liquid and semisolid dosage forms. Pre-formulation and stability testing, Process Validation and GMP practices in Pharmaceutical Industry, Sterilization and aseptic manufacturing of Parenteral products, Biopharmaceutics and Pharmacokinetics and their Importance in formulation, Development of novel drug delivery systems. An overview of NDA, ANDA and IND application.

2. Pharmacology and Medicinal Chemistry

Structure, nomenclature, classification, SAR, chemistry and Pharmacology of drugs acting on Central nervous system, Cardiovascular system, Autonomic nervous system, Gastro intestinal system, Respiratory system, chemotherapeutic Agents, Hormonal and Immune system. Structure based and Ligand based drug design, An overview on Clinical trials.

3. Pharmaceutical Analysis

Principles, instrumentation and applications of UV-Visible spectroscopy, Infrare spectroscopy, NMR spectroscopy, Mass spectroscopy, Thermal analysis, X-Ray diffraction analysis. Chromatography : Thin layer, Column, Ion exchange, Gas, High performance liquid, High performance thin layer, Affinity, Gel, Differential scanning calorimetry.

4. Pharmacognosy & Phytochemistry

Sources, tests, isolation, characterization and estimation of Alkaloids, Glycosides, Flavonoids, Phenolics, Terpenoids and Steroids. Dietary supplements and Nutraceuticals. Plant tissue culture.

7/7/2018

07/07/18