



## **Syllabus for Ph. D Entrance Test**

### **Section –A**

# **RESEARCH METHODOLOGY**

#### **1. Research Aptitude**

- Meaning and objectives of research
- Characteristics and types of research (Descriptive, Analytical, Exploratory, Applied, Qualitative & Quantitative)
- Importance of research in academic and practical contexts

#### **2. Research Design**

- Definition and purpose of research design
- Features of good research design
- Types of research designs: Experimental, Descriptive, Exploratory, Case Study, Cross-sectional, Longitudinal

#### **3. Research Problem & Hypothesis**

- What is a research problem; steps in identifying and formulating it
- Sources and characteristics of a good research problem
- Hypothesis: definition, role in research, types (simple, complex, directional, non-directional, null, alternate)

#### **4. Sampling Techniques**

- Population vs sample concepts
- Importance and logic of sampling in research
- Types of sampling: Probability (simple random, stratified, cluster) and non-probability (convenience, quota, purposive)

## **5. Data Interpretation & Analysis**

- Types of data (qualitative vs quantitative)
- Data organization: tabulation, classification, graphical representation
- Measures of central tendency (mean, median, mode)
- Measures of dispersion (range, variance, standard deviation)

## **6. Methods of Data Collection**

- Primary data: survey, interview, observation, questionnaires
- Secondary data: books, reports, archival data

## **7. Report Writing & Communication**

- Structure of a research report or thesis
- Writing abstract, introduction, literature review, methodology, results, conclusion

## **8. Research Ethics & Scientific Conduct**

- Integrity in research: avoiding data fabrication and falsification
- Citation ethics and intellectual property basics