

# Sarvajanik University

## Ph.D. Entrance Examination Syllabus

### Part - I Research Methodology

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- The present syllabus is designed for the Ph.D. entrance exam of all candidates.
- Entire syllabus has 10 units.
- Question paper in the examination will have 60 MCQs (06 questions from each unit).
- Candidate has to attempt any 30 questions, all of which will have equal weightage.
- In case of more than 30 questions attempted by the candidate, only the first 30 questions will be counted for the result.

#### 1. Research

(06 MCQs)

- Research: Meaning, Objectives of Research, Types, and Characteristics, Positivism and Post-positivist approach to research.
- Methods of Research: Experimental, Descriptive, Historical, Qualitative and Quantitative methods.
- Steps of Research.
- Research ethics

#### 2. Sampling methods and Errors

(06 MCQs)

- Population: finite and infinite Population
- Sample: types of method; methods of sampling
- Errors, precision and accuracy

#### 3. Graphical representation of Data

(06 MCQs)

- Line diagrams
- Bar Diagrams
- Pie Charts
- Histograms
- Frequency polygons

#### 4. Statistics

(06 MCQs)

- Measures of central tendency and dispersal; probability distributions (binomial, Poisson and normal)
- Sampling distribution; difference between parametric and non-parametric statistics;
- Confidence interval; Errors; levels of significance; Regression and Correlation;
- t-test; Analysis of variance; X<sup>2</sup> test; Basic introduction to Multivariate statistics,

## **5. Logical Reasoning / Aptitude**

**(06 MCQs)**

- Types of reasoning
- Number series, Letter series, Codes and Relationships.
- Mathematical Aptitude (Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages etc.).
- Evaluating and distinguishing deductive and inductive reasoning
- Analogies
- Venn diagrams: Simple and multiple; use for establishing validity of arguments.

## **6. Data Interpretation**

**(06 MCQs)**

- Sources, acquisition and classification of Data
- Quantitative and Qualitative Data
- Data Interpretation
- Data and Governance

## **7. Defining the Research Problem**

**(06 MCQs)**

- Elements of Word Processing and Spreadsheets
- Communications and Collaborations
- Effective literature studies approaches
- Making presentations
- Acknowledgments

## **8. Information and Communication Technology (ICT)**

**(06 MCQs)**

- ICT: General abbreviations and terminology
- Basics of Internet, Intranet, E-mail, Audio and Video-conferencing
- Digital initiatives in higher education
- ICT and Governance
- Application of ICT in research

## **9. Comprehension (From given paragraph)**

**(06 MCQs)**

Questions will include comprehension where a written paragraph is given for the students to read and then questions based on that paragraph are asked. Questions shall be designed to test comprehension and reasoning skills of students.

## **10. Innovation and IPR**

**(06 MCQs)**

- Innovation in research and development
- Types of IP: Patents, Trademarks, Copyright & Related Rights, Industrial Design, Traditional Knowledge, Geographical Indications, International framework for the protection of IP, IP as a factor in R&D, landmark IP Case Studies, introduction to the history of GATT, WTO, WIPO and TRIPS.