

University of Lucknow
Lucknow
Ph.D. Admissions 2019 – 20
Entrance Test Guidelines
Faculty of Science



Syllabus for Ph.D. Entrance Examination

Paper 1 Research Methodology

Basic Concept of Research:

- Meaning of Research
- Motivation in Research
- Objectives of Research
- Types of Research
- Research Approaches
- Significance of Research, and Research Methods versus Methodology,
- Research and Scientific Method
- Research Process
- Criteria of Good Research, Problems Encountered by Researchers in India

Literature survey:

- Sources of information, need for reviewing literature, primary-secondary-tertiary sources, journals, journal abbreviations, abstracts, current titles, reviews, monographs, dictionaries, text books, current contents.

Research Methodology:

- Identification, statement of research problem, objectives, design and execution of experiments,
- Collection and interpretation of experimental data and arriving at conclusions,
- Reporting the results of research-style and format, title, abstract and the text, references, tables, figures, elucidations, quotations and footnote,
- Writing of monographs, review articles and dissertations.
- Problem Identification & Formulation,
- Research Question
- Investigation Question
- Measurement Issues, Hypothesis, Qualities of a good Hypothesis, Logic & Importance

Data Analysis Techniques:

- Measurement Scales,
- Sources of error in measurement.
- Measures of central Tendency (Mean, Median, Mode),
- Measures of dispersion (range, mean deviation, standard deviation) Graphical representation of Data.
- T-test, chi-square test for association.

Report Writing and Documentation:

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- Format and style.
- Review of related literature its implications at various stages of research (Formulation of research problem, hypothesis, interpretation and discussion of results).
- Major findings, Conclusions and suggestions,
- Citation of references and Bibliography.

Research Ethics

- Ethical issues, copy right, royalty, intellectual property rights, citation and acknowledgement, Plagiarism, Reproducibility

Computer and its Role in Research

- Introduction,
- The Computer and Computer Technology,
- The Computer System, Important Characteristics,
- The Binary Number System,
- Computer Applications,
- Basic Knowledge of MS Office (Word, Excel and Power Point)

Paper II Subject Specific

- The syllabus of the subject specific part will be the same as prescribed for the PG Programs of the University of Lucknow.

General Guidelines

- Both paper I and II will contain 35 questions of one mark each.
- The test therefore will be of 70 marks.
- There will be no negative marking.
- Candidates will have the option to appear in the test for maximum two subjects if they are eligible in both of them.
- The Ph.D. entrance test will be held in one sitting, 90 minutes for candidates appearing in one subject and 135 minutes for candidates appearing in two subjects within the same faculty.
- Marks obtained in paper I by candidates who appear in two subjects within the same faculty will be added to the marks obtained in the subject specific paper.
 - Example: Candidate obtains 33 marks in paper I, 27 in first subject (A) and 25 in second subject (B).
 - The marks in Subject A will be $33 + 27 = 60$
 - The marks in Subject B will be $33 + 25 = 68$
- In case the candidate has applied for two subjects in different faculties, they will have to appear in both the paper I and Paper II of each faculty.