

**ANNEXURE**  
**RESEARCH METHODOLOGY (R – 20)**

(Common Pre-Ph.D paper for all Ph.d/M.Phil students admitted from 2020-21 onwards)

**Unit I: Foundations of Research:** Meaning, Objectives and Motivation in Research: Types of Research, Research Approaches, Research Process, validity and Reliability in Research. Criteria for Good research. Problems encountered by researchers in India.

**Research problem:** What is a research problem? Selecting the Problem. Defining the problem of research. Techniques involved in defining the problem.

**Unit II: Research Design:** Features of Good Design. Important concepts relating to research design. Types of Research Designs. Principles of Experimental Design.

**Sampling Design:** Steps in Sampling Design, Characteristics of a Good Sample Design, Random Samples and Random Sampling Designs.

**Unit III: Methods of Data Collection:** Primary Data, Questionnaire and Interviews. Differences between Questionnaires and Schedules. Collection of Secondary Data. Selection of appropriate method for data collection. Case Study method.

**Resources and ethics of research:** Audio-visual resources. Various resources in libraries. Web resources. What are research ethics? Code and policies of research ethics. Ethical issues in research: Copy right, misleading authorship, fabricating data etc.

**Unit IV: Testing of Hypothesis:** Tests of Hypothesis, Parametric Vs Non-Parametric tests, Procedure for Testing Hypothesis, Use of Statistical Techniques for Testing Hypothesis, Sampling Distribution, Sampling Theory Chi-Square Test. Analysis of Variance. What is ANOVA. The basic Principle of ANOVA. One way ANOVA. Significance of the analysis of variance. Analysis of Covariance (ANOCOVA).

**References and citations:** The use of quotations, foot notes/end notes, parenthetical citations. References and citations of various resources in the thesis such as books, monographs, electronic and audio-visual resources, articles, and web resources. Citation in MLA/APA/Harvard styles.

**Unit V: Meaning of interpretation;** Techniques of interpretation; Precautions in Interpretation; Significance of Report writing; Different steps in Report writing; Layout of Research Paper and thesis.


**Presentation and plagiarism:** PowerPoint Presentations at Conferences and Popular Lectures, Participating in Public Debates on Academic Issues. Plagiarism: What is Plagiarism. Types of Plagiarism. How to avoid Plagiarism in research papers/Thesis?

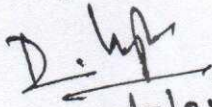
References:


Gupta, S. P. (2012). *Statistical Methods*. New Delhi: Sultan Chand & Sons.

Kothari, C. R. (2006). *Research Methodology: Methods and Techniques*. 2<sup>nd</sup> Ed, New Delhi: New Age International Publishers.

Narayana Reddy, P, and G. V. R. K. Acharyulu. (2008). *Research Methodology and Statistical Tools*. 1<sup>st</sup> Ed, New Delhi: Excel Books.

  
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