

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JULY 2013

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. (a) Explain the following research designs: Descriptive Studies and Causal Studies.
(b) Discuss in detail the essential components of a research proposal.
2. (a) Explain what is meant by 'Multivariate Analysis'.
(b) Explain in detail Partial Least Square Regression.
(c) Explain what is Meta Analysis, the steps of Meta Analysis, the methods and assumptions of Meta Analysis.

II. Short notes:

(10 x 6 = 60)

1. Define the term Validity. Discuss the different forms of Validity.
2. Discuss the Vancouver System of referencing, its advantages and disadvantages.
3. Explain the term "Plagiarism".
4. Distinguish between Parametric and Non Parametric Tests.
What are the assumptions of the Parametric Tests?
5. Discuss computer aided search of literature.
6. What do you understand by the term, "Peer Review"?
Discuss the "Simple Blind" and "Double blind" Peer Review methods.
7. What is Citation Analysis? How is it used as a tool for research evaluation?
8. Enumerate the Principles, laid down by ICMR that is to be followed when using human beings for research. Give the details pertaining to Principles of Informed Consent and the Principles of Competence.
9. What are Intellectual Property Rights? Discuss ownership of Patents and their transferability.
10. Distinguish between "Accuracy" and "Precision".

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2014

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Discuss various data collection methods with suitable examples.
2. Define Research, list the characteristics of true experimental designs and explain the various experimental designs with examples.

II. Short notes:

(10 x 6 = 60)

1. Non-probability sampling techniques.
2. Need for research ethics.
3. Student T test.
4. Impact factor.
5. Dissemination and Utilization of research findings.
6. Kaplan Meir Analysis.
7. Copyright and Royalty.
8. Components of Research Proposal.
9. Variables & Hypothesis.
10. Significance of Research in Health care.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2014

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Explain the steps of research process with examples.
2. Discuss the types of qualitative research design.

II. Short notes:

(10 x 6 = 60)

1. Research Hypothesis.
2. Ethics of Research.
3. Computer application in research.
4. Probability sampling techniques.
5. Presentation of data.
6. T-test.
7. Correlation coefficient.
8. Multivariate analysis.
9. Parametric and non-parametric tests.
10. Reference writing in Vancouver style.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2015

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. As a researcher you are approached by an NGO to identify the problem of Non Communicable disease in the 10 villages covered by them. Frame a projectproposal to address the same.
2. List the Quantitative research designs and discuss in detail the experimental designs using suitable examples.

II. Short notes:

(10 x 6 = 60)

1. Meta Analysis.
2. Data presentation.
3. Randomization.
4. Steps in research process.
5. Review of Literature.
6. Data Collection procedure.
7. Ethnography design.
8. ICMR Ethical guidelines.
9. Impact factor.
10. Referencing styles – Vancouver.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2015

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Discuss the types of sampling using suitable examples.
2. Describe in detail the logical format for writing a research work.

II. Short notes:

(10 x 6 = 60)

1. Correlation and Regression.
2. Data collection methods.
3. Incidence and prevalence.
4. Impact factor.
5. Software for data analysis.
6. RCT.
7. Plagiarism.
8. Phenomenology.
9. Sample size - Calculation.
10. Non-experimental designs.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2016

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. You are interested in identifying the reasons for and factors influencing non-compliance in the patients diagnosed to be HIV +ve. Write a detailed project proposal highlighting the research design including the ethical consensus to be solved.
2. List the sampling methods and discuss in detail the random sampling method.

II. Short notes:

(10 x 6 = 60)

1. Literature Search.
2. ICMR guidelines for ethics.
3. Hypothesis.
4. Focus groups.
5. Tests of significance.
6. Plagiarism.
7. Steps in research process.
8. Institutional Review Board.
9. Characteristics of Scientific writing.
10. Type I and Type II errors.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2016

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Write in detail about the essential components of good research proposal and what are the factors affecting the research design?
2. List the data collection tools used in quantitative designs and write in detail about questionnaire.

II. Short notes:

(10 x 6 = 60)

1. Systemic review.
2. Ethical principles.
3. Ethnography.
4. Sample size calculation.
5. Non parametric tests / analysis.
6. Impact factor.
7. Research report.
8. APA style of Referencing.
9. Knowledge dissemination.
10. Copy right.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2017

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. As a researcher you are asked to evaluate an intervention to address the problem of obesity among adolescents. Write a detailed project proposal highlighting the research design and methods.
2. Describe the characteristics and logical format for writing a research thesis and research papers.

II. Short notes:

(10 x 6 = 60)

1. Functions of Library.
2. Citation Index.
3. Methods of illustrations.
4. Student T test.
5. Kaplan Meir Analysis.
6. Computers in scientific research.
7. Clinical trial registration.
8. Royalty.
9. Types of Research.
10. Copy right.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2017

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Explain regression and correlation in clinical studies with appropriate examples.
2. Frame a hypothesis and design a research work to test association of "Protein-A" in the progression of a Diabetes Mellitus to its complications.

II. Short notes:

(10 x 6 = 60)

1. What is scientific research and write in brief about ethics involved?
2. Write in brief about (a) Mean (b) median and (c) mode.
3. Explain in brief about skewness and kurtosis.
4. Explain the types of errors with example.
5. Explain standard deviation and standard error mean.
6. What is student t-Test and explain its importance.
7. What is randomization and how do you randomize subjects for clinical trials?
8. Explain in brief about impact factor and citation index.
9. What are the features that are essential for an abstract?
10. How do you make an effective illustration?

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2018

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Explain the following research designs:
 - (a) Descriptive Studies and Casual Studies.
 - (b) Discuss in detail the essential components of a research proposal.
2. Discuss various data collection methods with suitable examples.

II. Short notes:

(10 x 6 = 60)

1. Computer application in research.
2. Research hypothesis.
3. Reference writing in Vancouver style.
4. Parametric and nonparametric test.
5. Randomization.
6. RCT.
7. Incidence and prevalence.
8. Non experimental designs.
9. Focus groups.
10. Type I and Type II errors.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2018

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Explain mean, standard deviation and coefficient of variation in medical practice with appropriate examples.
2. Outline the general principles to be followed in designing any research involving human subjects. Indicate the format to be followed in writing up a research proposal and the review procedures to be undertaken before initiating the research proposal.

II. Short notes:

(10 x 6 = 60)

1. How should a hypothesis be framed?
2. Describe the common software used for analysis of data.
3. Explain how a sample size is calculated.
4. Describe the effective presentation of data through diagrams and graphs.
5. What are the phases involved in a clinical trials?
6. Explain the types of errors with examples.
7. Briefly describe impact factor and citation index.
8. What is plagiarism? Describe methods to avoid plagiarism.
9. What are the applications of computers in medical practice?
10. Describe the need for randomization with an appropriate clinical example.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JANUARY 2019

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. As a researcher interested in dengue, you are required to write a project proposal on seroprevalence of dengue in your city. Outline your project proposal highlighting the research design and methods.
2. Explain how student's T-test and ANOVA are used with appropriate examples.

II. Short notes:

(10 x 6 = 60)

1. Describe the essential features required in an abstract.
2. Briefly explain the principles involved in conducting animal experiments.
3. Describe clinical trial registration in India.
4. Write briefly on intellectual property rights.
5. Describe the different types of clinical research?
6. Describe how data is collected and classified.
7. Describe the steps involved in conducting a meta-analysis.
8. Describe the principles in compensation for participation in clinical trials.
9. Define the common measures of central tendency for data set.
10. Chi square test.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2019

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. (a) Outline the key components of Research Protocol.

(b) Discuss ethical issues on Research involving HIV +ve, mentally ill patients and other vulnerable groups.
2. Classify the quantitative research designs and discuss in detail the experimental design using suitable examples.

II. Short notes:

(10 x 6 = 60)

1. Advantages of qualitative study.
2. Intellectual property rights.
3. Impact factor.
4. Mean, mode, median and standard deviation.
5. Types of Data analysis.
6. Art of writing an abstract.
7. Predatory journals.
8. Literature search.
9. GCP
10. Chi square test.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – DECEMBER 2020

(JULY 2020 SESSION)

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. How do you conduct Meta Analysis and explain it with an example?
2. How do you assess the Effectiveness of Anti-Retroviral Therapy for HIV Clinicaltrial using Kaplan - Meir Analysis?

II. Short notes:

(10 x 6 = 60)

1. Give six points on ICMR guidelines on the use of animals in Scientific Research.
2. Explain “Compensation of Participation” in Clinical Trials.
3. What are the components of Good Research Proposal?
4. What is Plagiarism and how to prevent it Scientific Reports?
5. Explain in brief about Types of Research with examples.
6. Write in brief about the role of Computer Application in Scientific Research.
7. Explain the applications of Chi-Square test with two examples.
8. Explain Royalty in Scientific Research.
9. What is Intellectual Property Rights (IPR) and what are the types?
10. What are the features that are essential for an Abstract?

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - AUGUST 2021

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. Explain the following research designs: Descriptive Studies and Causal Studies.
Discuss in detail the essential components of a research proposal.
2. What are the Test of Significance? Describe the different tests for different types of data.

II. Short notes:

(10 x 6 = 60)

1. Ethical considerations in Experimental studies involving human beings.
2. Blinding in a Drug Trial.
3. Measures of Dispersion.
4. Principles in sample size calculation.
5. Focus Group discussions.
6. Confounding.
7. Importance of Literature Search.
8. Publication Ethics.
9. What is plagiarism? Describe methods to avoid plagiarism.
10. Impact factor.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JULY 2022

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Essays:

(2 x 20 = 40)

1. a) Discuss the essential components of a research proposal.

b) As a researcher you are asked to study the problem of long COVID 19 in your state. Write a project proposal highlighting the research design and other components in research methods.
2. a) Design a research work to study to evaluate the effectiveness of ‘Music Therapy on relieving Anxiety among patients posted for CABG’. Also, formulate the objectives for the above problem statement.

b) “A Research Problem well stated is Research half done” – Explain in detail.

II. Short notes:

(10 x 6 = 60)

1. Bias in Research.
2. Cross Sectional Study Design.
3. Test of significance.
4. Median and mean.
5. Computer aided search of literature.
6. Sampling methods.
7. Sample size.
8. Meta analysis.
9. Intellectual property rights.
10. Multivariate analysis.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. - JANUARY 2023

PART - I

METHODOLOGY EXAMINATION

PAPER I – RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(2 x 20 = 40)**

1. a) Discuss the essential components of a research proposal.

b) As a researcher you are asked to evaluate an intervention to address the problem of obesity among urban school children. Write a project proposal highlighting the research design and other components in research methods.
2. a) Construction of Research question.

b) Discuss various data collection methods with suitable examples.

II. Write Short notes: **(10 x 6 = 60)**

1. Data presentation.
2. In depth interviews.
3. Test of significance.
4. Mode and median.
5. Organising literatures.
6. Research Ethics.
7. Type II Error & Type I Error.
8. Predictive values.
9. Independent and Dependent variable.
10. Intellectual property rights.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JULY 2023

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Classify various Research designs and explain with suitable examples.
2. As a researcher you are asked to evaluate an intervention to address the problem of obesity among adolescent in an urban area. Write a detailed project proposal highlighting the research design and methods.

II. Write Short notes:

(10 x 6 = 60)

1. Qualities of a good questionnaire.
2. Null hypothesis and Alternate hypothesis.
3. Reliability and Validity.
4. Applied Research.
5. Judgment Sampling.
6. Estimation of sample size.
7. Confidence Interval.
8. Primary data and Secondary data.
9. Pros and cons of survey method.
10. FGD (Focus Group Discussion).

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

Ph.D. – JANUARY 2024

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(2 x 20 = 40)**

1. Define research. Explain the classification of Research design and its concepts with examples.
2. As a researcher you are asked to identify the reasons for and factors influencing non-compliance among Diabetic (type 2). Write a detailed project proposal highlighting the research design including the plan for statistical analysis.

II. Write Short notes: **(10 x 6 = 60)**

1. Formulation of Research Question.
2. List of methods of Data Collection. Describe the structured Observation method.
3. Explain the 'Test of Significance'.
4. Explain type-I and type II errors.
5. Criteria of a good research problem.
6. Explain the classification of data.
7. Confidence interval and its importance.
8. Snowball method of sampling.
9. Sources of literature review.
10. Characteristics of good research objectives.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JULY 2024

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. How would you conduct the literature review and organize the retrieved literature in Research? Explain in detail the classification of Research design and its concepts with suitable examples.
2. Discuss the differences between qualitative and quantitative research approaches. When and why might one be preferred over the other?

II. Write Short notes:

(10 x 6 = 60)

1. Role of Pilot Testing in Health Research.
2. Concept of statistical significance.
3. Reliability & Validity.
4. Concept of triangulation in Research.
5. Standard Error & Standard Deviation.
6. Bias.
7. Importance of sample size.
8. Formulation of Research Question and PICO format.
9. Intellectual Property Rights.
10. Snowball sampling.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JANUARY 2025

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. How do you formulate a research question? Discuss the PICO approach with examples.
2. Explain the classification of data with suitable examples. Explain the basic concept of sampling. How do you determine the sample size of a research study?

II. Write Short notes:

(10 x 6 = 60)

1. Distinguish between Primary Data and Secondary Data.
2. Criteria of a good research.
3. Principles and Techniques of writing the Research Proposal.
4. ANOVA and Kruskal-Wallis test.
5. Standard Error & Standard Deviation.
6. What is Plagiarism? How Plagiarism can be avoided?
7. Confidence Interval.
8. Ethics of Research.
9. Research Hypothesis.
10. Likelihood ratios & ROC curve.

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THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

Ph.D. – JULY 2025

PART - I

METHODOLOGY EXAMINATION

PAPER I - RESEARCH METHODOLOGY

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on: **(2 x 20 = 40)**

1. Describe the elements of a Project Proposal. Illustrate the preparation of Project Proposal with an example.
2. Classify Quantitative Research Designs. Discuss the Differences between qualitative and quantitative research approaches. Why is design important in Research studies?

II. Write Short notes: **(10 x 6 = 60)**

1. PICO format in Research Question.
2. Sources of a literature review.
3. Ethnographic research.
4. Types of Sampling.
5. Standard Error and Standard Deviation.
6. Bias.
7. Data Collection Methods.
8. ANOVA and its types.
9. Intellectual Property Rights.
10. Primary Data and Secondary Data.

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