



Gambal

Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD [now MoE]

Re-accredited with A++ Grade by NAAC. CGPA 3.65 /4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Master of Education Degree Examination – November 2025 I Semester

Class : I M.Ed.

Time : 3 Hours
Max. Marks : 100

25MEDC03 Introduction to Educational Research and Statistics

Course Outcomes:

- CO1: Independently search for, integrate and critically assess research information within the field of education
- CO2: Design different data collection methods and conduct an in-depth interview, a focus group, qualitative case study and a mixed method study.
- CO3: Construct instruments for the measurement of different psychological, sociological, technological and other educational factors.
- CO4: Enter, analyse and interpret the results of the data using SPSS and Microsoft Excel
- CO5: Apply basic concepts in Statistics to educational research

Part A

10 x 1 = 10

Choose the Correct Answer

- One essential quality of a good researcher is CO3 K2
 - laziness
 - prejudiced attitude
 - objectivity and patience
 - resistance to criticism
- Educational research is best defined as CO2 K1
 - collection of facts only
 - systematic investigation to improve educational practice
 - random study of learners
 - mere observation of teaching methods
- The type of research which aims to expand the existing knowledge base without immediate practical application is CO1 K2
 - Applied research
 - Fundamental research
 - Descriptive research
 - Analytical research
- Which of the following refers to the extent to which results of a study can be generalized? CO3 K3
 - Internal validity
 - External validity
 - Construct validity
 - Content validity
- The sampling technique that ensures that every member has an equal chance of selection is CO3 K2
 - Purposive sampling
 - Stratified sampling
 - Random sampling
 - Quota sampling
- The research tool that is most suitable for collecting in-depth qualitative data is CO3 K4
 - Questionnaire
 - Rating scale
 - Interview
 - Checklist
- The difference between a parameter and a statistic is that CO1 K1
 - a parameter describes a sample, while a statistic describes a population
 - a statistic describes a sample, while a parameter describes a population
 - both parameter and statistic describe a sample
 - both parameter and statistic describe a population
- The significance of statistics in research is that it CO5 K5
 - provides proof without evidence
 - ensures subjective analysis
 - helps in decision making based on data
 - avoids the need for data collection
- The arithmetic mean is most appropriate when the data are CO1 K1
 - qualitative
 - quantitative and continuous
 - highly skewed
 - nominal
- If a distribution has kurtosis > 3, it is classified as CO5 K5
 - Platykurtic
 - Mesokurtic
 - Leptokurtic
 - Symmetrical

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Define educational research. Explain its meaning and scope with suitable examples. CO1 K2
(or)
- 11.b. Discuss the nature and characteristics of educational research. How does it differ from other types of research? CO1 K3
- 12.a. What is a hypothesis? Describe its characteristics and importance in educational research with suitable examples. CO1 K3
(or)
- 12.b. Explain probability and non-probability sampling techniques. CO3 K4
- 13.a. Define a research problem. Discuss the essential criteria for identifying a good research problem with suitable examples. CO2 K3
(or)
- 13.b. Explain the major sources of a research problem. CO2 K3
- 14.a. What are frequencies and continuous measures? Illustrate with examples how they are used in organizing research data. CO2 K3
(or)
- 14.b. Discuss the process of data organization in SPSS and Excel. Compare the advantages of both in research analysis. CO3 K4
- 15.a. Define descriptive statistics and explain its significance in educational research with suitable examples. CO2 K1
(or)
- 15.b. Explain the concept of skewness. How do positive and negative skewness affect the interpretation of data distribution? CO2 K3

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Describe the qualities of a good researcher. How do these qualities influence the validity and reliability of research outcomes? CO3 K4
(or)
- 16.b. Suggest innovative ways in which educational research can be enhanced through technology and interdisciplinary approaches. CO5 K5
- 17.a. Discuss the meaning and importance of conceptual and empirical research with suitable illustrations. CO3 K4
(or)
- 17.b. Explain the meaning and importance of ex-post facto research. Discuss how it differs from experimental research with examples. CO5 K4
- 18.a. Critically analyze the role of review of related literature in formulating a research problem and hypothesis. CO2 K4
(or)
18. b. Construct a well-designed questionnaire and checklist for a study on student attitudes towards online learning. Justify your choice of items. CO3 K5
- 19.a. Examine the graphical representation of data. How do they aid in interpretation of research results? CO4 K4
(or)
- 19.b. Critically evaluate the concept of normal distribution. Why is it considered important in educational measurements? CO5 K4
- 20.a. Differentiate between skewness and kurtosis. Illustrate with diagrams and explain their educational implications. CO3 K4
(or)
- 20.b. Discuss the merits and demerits of various measures of variability. Which measure is most reliable and why? CO3 K5
