



Jambal

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 – May 2025 II Semester

Class: I M.Ed.

Time : 3 Hours

Max. Marks : 100

23MEDC07 Advanced Educational Research and Statistics

Course Outcomes:

- CO1: Choose appropriate quantitative or qualitative method to collect data
- CO2: Write a research proposal suitable for submission to a research funding body
- CO3: Carry out independent research using a range of research designs and methods
- CO4: Maintain respect for individual research contributions and intellectual property rights and demonstrate ethical behavior
- CO5: Interpret and present the result of an independently conducted statistical analysis

Part A

10 x 1 = 10

Choose the Correct Answer

1. Which of the following terms best indicate the intent of a qualitative research?
(A) Understanding (B) Explanation (C) Description (D) Exploration (E) Interpretation
a. A, C and D b. A, D and E c. B, C and D d. B, D and E CO1 K2
2. Narrative enquiry is distinctive in the field of
a. Qualitative b. Quantitative c. Descriptive d. Experimental CO1 K1
3. The research design which manipulates conditions/variables and studies its effects.
a. Correlation b. Descriptive c. Exploratory d. Experimental CO2 K3
4. In which research design, sampling is least necessary?
a. Comparative analysis b. Experimental study
c. Case study d. Co-relational study CO2 K2
5. _____ is a plan, structure and strategy of investigations so conceived as to obtain answers to research problem.
a. Research plan b. Research proposal
c. Research methodology d. Research design CO3 K1
6. Which of the following is NOT covered under Intellectual Property Rights (IPR)?
a. Patents b. Personal Opinions c. Trademarks d. Copyrights CO3 K2
7. What does a correlation coefficient of +1 indicate?
a. No correlation between variables b. A perfect negative correlation
c. A perfect positive correlation d. Neither weak nor strong relationship CO4 K2
8. A scatter plot is useful for
a. Identifying the relationship between two variables b. Calculating the central tendency
c. Predicting values with a regression equation d. Testing hypotheses CO4 K3
9. An investigator wants to conduct a study on politically active student-leaders in educational institutions. Which of the following methods of sampling would be most appropriate?
a. Simple random sampling b. Quota sampling
c. Purposive sampling d. Snowball sampling CO5 K3
10. The chi-square test is used for analysing
a. Numerical b. Ordinal c. Continuous d. Categorical CO5 K1

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Define qualitative research and explain any four characteristics of a good qualitative study. CO1 K1
- (or)
- 11.b. Compare the steps involved in conducting a case study and an ethnographic study in qualitative research. CO1 K4
- 12.a. How can internal and external validity affect the results of an experimental study? CO2 K2
- (or)
- 12.b. Discuss the strengths and limitations of quasi-experimental research designs in educational research. CO2 K2
- 13.a. Explain the importance of research report writing. CO3 K2
- (or)
- 13.b. How can a researcher ensure proper citation and acknowledgment in academic writing? CO3 K3
- 14.a. What is Spearman's Rank Order Correlation, and in what type of data analysis is it most useful? CO4 K1
- (or)
- 14.b. Explain the concept of correlation and discuss how scatter plots help in interpreting relationships between two variables with suitable examples. CO4 K2
- 15.a. Differentiate between one-tailed and two-tailed tests. CO5 K4
- (or)
- 15.b. Explain the concept of Standard Error of the Mean (SEM) and its significance in inferential statistics. CO5 K2

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Select an educational issue and explain how you would apply a qualitative research approach to study it. Describe the phases involved in designing a qualitative study. CO1 K3
- (or)
- 16.b. Design a qualitative research study using any one approach (Case Study, Ethnography or Grounded Theory) to investigate students' problem - solving skills. CO1 K6
- 17.a. Evaluate single-group design, control-group design, and quasi-experimental design in terms of their strengths, limitations, and suitability for educational research. CO2 K5
- (or)
- 17.b. Explain the key terminology used in experimental research design CO2 K2
- 18.a. Analyze the criteria for evaluating a research report. What factors determine the quality and credibility of a well-written research study? CO3 K4
- (or)
- 18.b. Critically evaluate the role of ethical committees in research. How do they ensure ethical compliance in research involving human participants? CO3 K5
- 19.a. Explain the step-by-step process of calculating Pearson's Product-Moment Correlation Coefficient with a numerical example. CO4 K3
- (or)
- 19.b. Describe a research scenario where simple regression analysis could be applied. Explain how you would collect and analyze the data. CO4 K3
- 20.a. Analyze the assumptions, strengths, and limitations of using ANOVA (One-Way Analysis of Variance) compared to a t-test when analyzing multiple group differences. CO5 K4
- (or)
- 20.b. Explain the t-test and describe the following types:
- i. Means of two independent large samples
 - ii. Means of two small independent samples
 - iii. Two correlated means CO5 K2