

(8 pages)

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M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024

Third Semester

Computer Application

Elective V — RESEARCH METHODOLOGY

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. A scientific and systematic search for pertinent information on a specific topic is known as _____.
(a) Procedure (b) Algorithm
(c) Research (d) Resource
2. Which research includes surveys and fact-finding enquiries of different kinds?
(a) Descriptive (b) Analytical
(c) Applied (d) Fundamental

3. Which survey should be undertaken for pre-testing the questionnaire?
(a) Experience (b) Pilot
(c) Post (d) Frequent
4. All items in any field of inquiry constitute a _____.
(a) Hypothesis (b) Sample
(c) Census (d) Population
5. Probability sampling is also known as _____.
(a) Non-parametric (b) Random
(c) Non-probability (d) Parametric
6. Which of the following data are numerical type only?
(a) Ratio (b) Interval
(c) Ordinal (d) Nominal
7. The _____ is a statistical measure used in the context of sampling analysis for comparing a variance to a theoretical variance.
(a) T-ANOVA (b) One way ANOVA
(c) Chi-Square (d) ANOVA

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8. An important property of χ^2 is its _____ nature.

- (a) Multiplicative (b) Additive
(c) Subtractive (d) Divisive

9. The expansion of ANOVA is _____.

- (a) Analytical of Variance
(b) Analysis of Variable
(c) Analysis of Values
(d) Analysis of Variance

10. The _____ method is the most commonly used method specially in studies relating to behavioural sciences.

- (a) Observation
(b) Interview
(c) Questionnaire
(d) Schedule

11. _____ refers to the task of drawing inferences from the collected facts after an analytical and/or experimental study.

- (a) Questionnaire (b) Report
(c) Interpretation (d) Schedule

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12. Which one is the correct order entries in bibliography for the book?

- (a) Kothari, C.R., Quantitative Techniques, New Delhi, Vikas Publishing House Pvt. Ltd., 1978.
(b) Vikas Publishing House Pvt. Ltd., Kothari, C.R., Quantitative Techniques, New Delhi, 1978.
(c) Quantitative Techniques, Kothari, C.R., New Delhi, Vikas Publishing House Pvt. Ltd., 1978.
(d) 1978, Kothari, C.R., Quantitative Techniques, New Delhi, Vikas Publishing House Pvt. Ltd.

13. ENIAC stands for _____.

- (a) Electronic Numerical Integrator and Calculus
(b) Electronic Number Integrator and Calculator
(c) Electrical Numerical Integrator and Calculator
(d) Electronic Numerical Integrator and Calculator

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[P.T.O.]



14. The _____ is incorporated by the manufacturer into the electronic circuitry of computer.

- (a) Software (b) Hardware
(c) Firmware (d) Middleware

15. The sequence of steps used to accomplish the task within a finite time is known as

- (a) Hardware (b) Software
(c) Firmware (d) Algorithm

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

16. (a) Categorize the types of research.

Or

(b) Why do we need for research design?

17. (a) Compare the different types of Sample designs.

Or

(b) How will you find the sources of errors in measurement?

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18. (a) Mention the limitations of Chi Square test.

Or

(b) What is ANOVA? Mention the short cut for one way ANOVA.

19. (a) Enumerate the methods of data collection.

Or

(b) Examine the need of Interpretation.

20. (a) Write down the steps of algorithmic research.

Or

(b) Estimate the role of computers in research.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

21. (a) Explain the significance of research.

Or

(b) Describe some of the important research designs used in experimental hypothesis-testing research study.

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22. (a) Enumerate the steps involved in sampling design.

Or

- (b) Elucidate the techniques for developing measurement-tools.

23. (a) 200 digits were chosen at random from a set of tables. The frequencies of the digits were:

Digit	0	1	2	3	4	5	6	7	8	9
Frequency	18	19	23	21	16	25	22	20	21	15

Calculate χ^2 .

Or

- (b) Analyse and interpret the following statistics concerning output of wheat per field obtained as a result of experiment conducted to test four varieties of wheat viz., A, B, C and D under a Latin square design.

C₂₅ B₂₃ A₂₀ D₂₀

A₁₉ D₁₉ C₂₁ B₁₈

B₁₉ A₁₄ D₁₇ C₂₀

D₁₇ C₂₀ B₂₁ A₁₅

24. (a) Describe the data collection through questionnaires.

Or

- (b) Elucidate the significance of report writing.

25. (a) Summarize meta heuristic approaches for combinational problems.

Or

- (b) Demonstrate the various research opportunities in computer applications.

