



QP CODE: 25050574



25050574

Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION DECEMBER 2025

First Semester

M Sc ENVIRONMENT SCIENCE AND MANAGEMENT

Core Courses - ES010105 - RESEARCH METHODOLOGY AND STATISTICS

2019 Admission Onwards

02B9F403

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

Answer any **eight** questions.

Weight **1** each.

1. Explain importance of problem selection in research.
2. Explain systematic sampling.
3. Define the terms constant and variable
4. Find the 4th and 9th term of the sequence 256 , 128 , 64 ,
5. Compare zero vector and unit vector.
6. Discuss application of histogram.
7. Calculate mean for the following data. 28 , 32 , 18 , 16 , 42 , 12 , 39.
8. Distinguish between linear and nonlinear correlation.
9. What are the applications of Students t test ?
10. Explain Chi Square statistic.

(8×1=8 weightage)

Part B (Short Essay/Problems)

Answer any **six** questions.

Weight **2** each.

11. Explain the basic principles of experimental design.
12. Explain different types of matrices.
13. Find $\frac{d}{dx}(x^2 e^x)$
14. Explain standard deviation and its merits.
15. Explain kurtosis.





16. Explain the steps in hypothesis testing.
17. Write a brief note on ANOVA.
18. Explain the method to calculate dispersion measure using Excel Sheet

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. What are the basic rules to prepare a research report?

20. Find the inverse of the matrix $A = \begin{bmatrix} 3 & 4 & 11 \\ 10 & 7 & 12 \\ 4 & 6 & 9 \end{bmatrix}$

21. Explain classification and tabulation of data.

22. Explain theoretical distributions.

(2×5=10 weightage)

