Reg No:.....
Name :.....

First Semester FYUGP Degree Supplementary Examination January 2025

KU1DSCSTA124 - BASIC STATISTICS AND NUMERICAL SKILLS

2024 Admission onwards

Time : 2 hours Maximum Marks : 70

Section A

Answer any 6 questions. Each carry 3 marks.

1. What is the mode in a set of data?
2. What is the harmonic mean?
3. What are deciles of a dataset?
4. Define mean deviation from mean and mention its formula.
5. Define the term "measures of dispersion" and its significance in statistics.
6. Define coefficient of quartile deviation. Given Q1 = 12 and Q3 = 24, calculate the coefficient of quartile deviation.
7. Write down the rule for adding two matrices. Find $A + B$ if $A=\begin{pmatrix} 6 & 10 \\ 9 & 2 \end{pmatrix}$ $B=\begin{pmatrix} 12 & 15 \\ 14 & 24 \end{pmatrix}$
8. Define diagonal matrix, triangular matrix and a column matrix.

Section B

Answer any 4 questions. Each carry 6 marks.

9. Define median of a set of data. Describe the process of calculating the median of a dataset with an odd number of data points and with
10. What are the different measures of central tendency? Explain the key differences between the arithmetic mean, median, and mode.
11. What are quartiles, and how are they calculated? Provide an example.
12. Define standard deviation of a dataset. Explain the advantages and limitations of using standard deviation as a measure of dispersion.
13. Explain how the coefficient of variation can be used to compare two different datasets. Find the coefficient of variation if the mean is 50 and the standard deviation is 5.

14. Explain the steps to calculate the coefficient of mean deviation from the median.

Section C

Answer any 2 questions. Each carry 14 marks.

15. Differentiate between probability sampling and non-probability sampling. Examine the strengths and weaknesses of stratified random sampling compared to other probability sampling methods.

16. Examine the benefits and challenges of using primary data collection methods such as surveys, interviews, and observations, compared to secondary data sources like reports, databases, and websites.

17. Define rank of a matrix. Calculate the rank of the matrix $A=\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$