Reg No:..... K24FY1494 (C)
Name :.....

First Semester FYUGP Statistics Examination
November 2024 (2024 Admission onwards)
KU1DSCSTA124 (BASIC STATISTICS AND NUMERICAL SKILLS)

(EXAM DATE : 06-12-2024)

Time : 120 min Maximum Marks : 70

Part A (Answer any 6 questions. Each carries 3 marks)

1. Define primary data. Explain various methods of collecting primary data. 3
2. What is the difference between census and a sampling? 3
3. What is non-probability sampling? 3
4. List any three properties of the arithmetic mean. 3
5. Define weighted arithmetic mean of a dataset. 3
6. What are percentiles of a dataset? 3
7. Define the term "measures of dispersion" and its significance in statistics. 3
8. Explain quartile deviation. How is it different from range? 3

Part B (Answer any 4 questions. Each carries 6 marks)

9. Describe the difference between nominal and ordinal scales with suitable examples. 6
10. Differentiate between interval and ratio scales with suitable examples. 6
11. When do you prefer stratified random sampling over simple random sampling. Explain stratified random sampling method. 6
12. Define arithmetic mean of a set of data. Discuss the advantages and disadvantages of using the arithmetic mean as a measure of central tendency. 6
13. What are partition values? Explain the concept of percentiles, and describe how they are useful in understanding the distribution of data 6
14. Define geometric mean of a set of data. Discuss the advantages and disadvantages of using the geometric mean as a measure of central tendency. 6

Part C (Answer any 2 question(s). Each carries 14 marks)

15. (a) Define the following types of matrices and provide examples: Diagonal matrix, scalar matrix, unit matrix, and null matrix. 7

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(b) Given matrices A=$\begin{pmatrix} 8 & 0 \\ 1 & 2 \end{pmatrix}$ B=$\begin{pmatrix} 2 & 6 \\ 5 & 3 \end{pmatrix}$. find AB and BA. Check whether AB=BA. 7

16. Explain the method of finding determinant of a 3 X 3 matrix. Calculate the determinant of the following matrix: A=$\begin{pmatrix} 8 & 9 & 12 \\ 11 & 13 & 2 \\ 16 & 3 & 10 \end{pmatrix}$ 14

17. (a) Explain in detail the concept of mean deviation and standard deviation. Calculate both for the following data set: 8, 12, 15, 20, 25, 30, and interpret the results. 7

(b) Explain various relative measures of dispersion. Explain their significance in understanding data dispersion. 7

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