

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

K24FY1494 (C)

**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

- (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  $3 \times 3$  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

Don Bosco Arts and Science College  
Angadikadavu, Kannur  
lib.donbosco.ac.in

