

Term End External Examination 1st Semester (Session-Feb 2025)

Subject: Multidisciplinary Course

Course No and Title: STS022I/ Basic Statistics

Time: 1.15 hours Max Marks:50 Min. Marks:20

Section A: Objective Type Questions

- Q1. Choose the appropriate Answer: (4x1.5=06)**
- Which of the following is NOT a measure of central tendency?
 A Arithmetic Mean B Standard Deviation
 C Median D Mode
 - Which measure of central tendency is most affected by extreme values?
 A Median B Mode
 C Arithmetic Man D Geometric Mean
 - Which of the following is a relative measure of dispersion?
 A Range B Standard Deviation
 C Coefficient of Variation D Mean Deviation
 - What is the main objective of measuring dispersion in a dataset?
 A To find the average value B To determine the middlemost value
 C To measure the spread or D To identify the most variability of data frequently occurring value

Section-B: Descriptive Type Questions (Short Type)

- Q2: Answer all the Questions (4 x 4 =16)**
- Define the term "central tendency." What are the essential characteristics of a good measure of central tendency?
 - Differentiate between arithmetic mean, median, and mode with suitable examples.
 - What is the difference between absolute and relative measures of dispersion? Give examples.
 - Define standard deviation. Why is it considered a better measure of dispersion than range and mean deviation?

Section – C: Descriptive Type Questions (Medium Type)

Answer all the questions: (2 x 7=14)

- Q3.** Derive the formula for the arithmetic mean of a grouped frequency distribution and illustrate with an example.

OR

Explain the merits and demerits of geometric mean and harmonic mean. In what situations are these measures preferred over the arithmetic mean?

- Q4.** Calculate the Quartile deviation and its coefficient for the following data:

X: 10 20 30 40 50 60 70 80

F: 5 10 20 22 28 36 20 10

OR

Explain the concept of mean deviation. Derive the formula for mean deviation about the mean for ungrouped data.

Section – D: Descriptive Type Questions (Long Type)

Answer any one of the following: (1 x 14=15)

- Q5.** The following table shows the marks obtained by students in a statistics exam:

Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency:	5	8	15	20	25	18	12	7

- Calculate the Arithmetic Mean using the assumed mean method.
 - Compute the Median for the given data.
 - Find the Mode using the formula for a grouped frequency distribution.
- Q6.** Calculate the Mean Deviation about the Median and the Standard Deviation for the following data:

X: 10 20 30 40 50 60 70

F: 4 6 10 15 20 12 8