



Registration Number:

Date & session:

ST. JOSEPH'S UNIVERSITY, BENGALURU -27
Open Elective Statistics – I SEMESTER
SEMESTER EXAMINATION: OCTOBER 2023

(Exam conducted in November/December 2023)

STOE 1 – STATISTICAL METHODS

Time: 2 Hours

Max Marks: 60

This paper contains ONE printed page and ONE part.
Scientific Calculator is allowed.

Answer any SIX of the following.

10 X 6 = 60

1. A) Define Statistics. Give any four scopes of Statistics.
B) What do you mean by scale of measurement? Explain different types of it. (5+5)
2. A) Distinguish between the following with appropriate examples for each:
 - i. Histogram and Bar Graph
 - ii. Stratified Sampling and Systematic sampling.B) Define Simple Random Sampling. Briefly explain its different types with an example for each. (5+5)
3. Distinguish between the following with appropriate example for each:
 - i. Time Series data and Cross-sectional data
 - ii. Qualitative data and Quantitative data
 - iii. Continuous and discrete data
 - iv. Census survey and sample survey.
4. A) Find the median and mode wage of the following distribution.

Wages (in Rs.)	2000-3000	3000-4000	4000-5000	5000-6000	6000-7000
No. of workers	3	5	20	10	5

B) Explain the different types of measures of dispersion. (5+5)
5. A) Briefly explain Karl Pearson's coefficient of correlation. How do you interpret the values of the correlation coefficient?
B) Define the level of significance in hypothesis testing.
C) Distinguish between one tailed and two tailed tests with a neat diagram. (5+1+4)
6. A) Define the following terms in probability with an example for each:
 - i. Random experiment.
 - ii. Sample space and Sure event
 - iii. Discrete random variable and Continuous random variable
 - iv. Probability density function.B) State the addition theorem and multiplication theorem of probability.
C) State Bayes' theorem. Give any two applications of it. (5+2+3)
7. A) State the axiomatic and classical definition of Probability.
B) Define Poisson distribution with an example. Mention any three properties of it.
C) Define mutually exclusive and exhaustive events. (3+5+2)
8. A) Define Type I error and Type II error.
B) Differentiate between Simple and Composite hypotheses.
C) Define Chi-square distribution. Mention any two uses of it. (3+3+4)
