

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF COMMERCE  
END TERM EXAMINATION - JAN 2023**

**Semester :** SEMESTER - I - 2022

**Course Code :** MAT1012

**Course Name :** Sem I – MAT1012 - Introduction to Statistics

**Program :** B.Sc. Economics

**Date :** 9-JAN-2023

**Time :** 1.00PM - 4.00PM

**Max Marks :** 100

**Weightage :** 50%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.

**PART A**

**ANSWER ALL THE FOLLOWING QUESTIONS**

**10 X 2 = 20M**

1. A population census is taken once every 10 years. Which form of data presentation would be most appropriate?  
(CO1) [Knowledge]
2. A class consists of 4 boys and 3 girls. The average marks obtained by the boys and girls are 20 and 30 respectively. Find the class average.  
(CO2) [Knowledge]
3. Find the D6 for the following data  
11, 25, 20, 15, 24, 28, 19, 21  
(CO2) [Knowledge]
4. What is Inter Quartile Range of the data set  
87,36,95,99,55,62,48,71,50,65,90  
(CO2) [Knowledge]
5. Can r lie outside the -1 and 1 range depending on the type of data? Give specific reason.  
(CO2) [Knowledge]
6. What is the probability of getting a sum of 7 when two dice are thrown?  
(CO2) [Comprehension]
7. A numerical value used as a summary measure for a sample, such as sample mean, is known as a?  
(CO3) [Comprehension]
8. What are the sources of secondary data.  
(CO3) [Comprehension]

9. If two events A and B are mutually inclusive, then  $P(A \text{ or } B)$  is (CO3) [Comprehension]
10. What is meant by Probability? Explain the methods of probability. (CO3) [Comprehension]

### PART B

**ANSWER ALL THE FOLLOWING QUESTIONS**

**4 X 10 = 40M**

11. Calculate Standard Deviation and variance by using the following data:

Class	75-	125-	175-	225-	275-	325-	375-	425-
Interval	125	175	225	275	325	375	425	475
Frequency	12	26	45	60	37	13	5	2

(CO4) [Comprehension]

12. Calculate the Mean deviation from mean, median, mode and standard deviation and its coefficient of the following series:

X	40	45	52	53	54	55	56	57	68	70
Y	10	12	14	9	10	11	12	11	9	8

(CO4) [Comprehension]

13. Let us consider the case of a small assembly plant with 50 employees. Each worker is expected to complete work assignments on time and in such a way that the assembled product will pass a final inspection. On occasion, some of the workers fail to meet the performance standards by completing work late or assembling a defective product. At the end of a performance evaluation period, the production manager found that 5 of the 50 workers completed work late, 6 of the 50 workers assembled a defective product, and 2 of the 50 workers both completed work late and assembled a defective product. Find out randomly selected employee received a poor performance rating.

(CO5) [Comprehension]

14. A company accepted a lot of 70 picture tubes of a colour television. Out of the 70 picture tubes, 10 are defective.
- a. If two picture tubes are drawn at random, one at a time without replacement, what is the probability that both the picture tubes are defective?
- If two picture tubes are drawn at random, one at a time with replacement, what is the probability that both the picture tubes are defective?

(CO5) [Comprehension]

### PART C

**ANSWER ALL THE FOLLOWING QUESTIONS**

**2 X 20 = 40M**

15. By using Pearson's coefficient of correlation find out the relationship between x series and y series

X Series	70	90	50	80	60	90	70	40	80	70
Y Series	100	120	60	90	80	110	100	50	100	90

(CO5) [Comprehension]

16. Define the Normal Probability Distribution. Also explain characteristics of Normal Distribution with the help of diagram.

(CO6) [Application]