

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

SET A

**SCHOOL OF COMMERCE
END TERM EXAMINATION - JAN 2024**

Semester : Semester I - 2023

Course Code : BSE2051

Course Name : Introduction to Statistics

Program : B.Sc. Economics

Date : 17-JAN-2024

Time : 1:00 PM - 4:00 PM

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.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

5 X 2M = 10M

1. State the difference between numbers and data.
(CO1) [Knowledge]
2. State the meaning of central tendency.
(CO2) [Knowledge]
3. Define favourable outcome with an example.
(CO3) [Knowledge]
4. A die is rolled one time. Write the sample space and also give the probability of each event occurring.
(CO3) [Knowledge]
5. Differentiate between discrete random variable and continuous random variable with example.
(CO3,CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

5 X 10M = 50M

6. Calculate the arithmetic mean using direct method.
Income (Rs '000): 25 26 27 28 29 30
No. of families : 3 6 9 14 10 8
(CO1) [Comprehension]
7. State five characteristics of a good average.
(CO2) [Comprehension]

8. (a). A large firm employs a total of 140 engineers, of whom 72 are male and the remaining are females. Of the female engineers, 28 are under 35 years of age, 30 are between 35 and 45 years of age and the remaining are over 45 years. What is the probability that a randomly selected engineer is a female under 35 years of age.
 (b). A box contains 20 discs numbered consecutively from 1 to 20. A disc is selected at random. Find the probability that the number on disc is divisible by 3 or 5.

(CO3) [Comprehension]

9. If two dice are rolled, then what will be the probability distribution of the sum of the dice?

(CO4) [Comprehension]

10. If on an average 2 students arrive in a class per minute, what is the probability that
 a. In a given minute, exactly 3 students will arrive?
 b. In a given minute, no students will arrive?
 c. In a given minute, more than 2 students will arrive?
 d. In a 5-minute period, exactly 10 students will arrive?

(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

2 X 20M = 40M

11. (a). Calculate the arithmetic mean

| Profit (in lacs of Rs) | x |
|---------------------------|-----|
| 0-20 | 10 |
| 20-40 | 30 |
| 40-60 | 50 |
| 60-80 | 70 |
| 80-100 | 90 |
| 100-120 | 110 |

- b). Find out the median weight of the students

| Profit (in lacs of Rs) | No. of companies |
|---------------------------|------------------|
| 0-20 | 8 |
| 20-40 | 15 |
| 40-60 | 36 |
| 60-80 | 22 |
| 80-100 | 12 |
| 100-120 | 7 |

(CO2) [Application]

12. State the classical approach to the calculation of probability. Discuss marginal, joint and conditional probability.

(CO2,CO3) [Application]