

Date:

Registration number:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**M.A. - ECONOMICS II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**EC 8117 - Statistical Methods for Economists**

Time- 2 ½ hrs Max Marks-70

This question paper contains 2 printed pages and three parts

**PART A**

**Answer any 5 questions (2x5= 10)**

1. What is arithmetic mean?
2. Find the range of the following observations 12, 18, 7, 3, 5.
3. Give an example of discrete and continuous random variables.
4. Consider two events A and B, P(A) =0.2 and P(B) =0.3 what is P(AՈB), given that events A and B are independent.
5. What is the sample space of a set?
6. What does a Karl Pearson correlation value of zero mean?
7. Name any two sampling distributions.

**PART B**

**Answer any 3 questions (10x3=30)**

1. A box contains 10 green and six white marbles. A marble is chosen at random, its colour noted and not replaced. This is repeated once more. What is the probability that the marbles are of the same colour?
2. If there is probability of 0.2 of failure to get through in any attempt to make a phone call find the probability of three or more failures in 10 attempts. Also, state the distribution the variable number of successful phone calls follows.
3. Fifty students appeared in an examination. The result of the passed students are given below Find the arithmetic mean and the standard deviation.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 40 | 50 | 60 | 70 | 80 | 90 |
| No.of Students | 6 | 14 | 7 | 5 | 4 | 4 |

1. Write a note on correlation.
2. Average driving speed for males and females are given below.

|  |  |
| --- | --- |
| Males | Females |
| Number of males-34 | Number of females-29 |
| Sample mean for males-105.5 | Sample mean for females-90.9 |
| Standard deviation for males- 20.1 | Standard deviation for females-12.2 |

Set up the null hypothesis and test if the average driving speeds are different between males and females.

**PART C**

**Answer any 2 questions (15x2=30)**

1. Find the regression equation of y on x from the following data.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | 10 | 25 | 34 | 42 | 37 | 35 | 36 | 45 |
| y | 56 | 64 | 63 | 58 | 73 | 75 | 82 | 77 |

1. Write a note on the different types of ( probability and non-probability) sampling.
2. Discuss measures of central tendency. Also list their limitations.