LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

B.A. DEGREE EXAMINATION – **ECONOMICS**

FOURTH SEMESTER – **NOVEMBER 2024**

UEC 4501 – STATISTICAL METHODS FOR ECONOMICS

Date: 13-11-2024 Dept. No. Max. : 100 Marks

Time: 09:00 am-12:00 pm

	SECTION A - K1 (CO1)
	Answer ALL the Questions **(10 x 1 = 10)**
1.	**Choose the correct answer**
a)	Which of the following is a NOT a qualitative variable? a) Religion b) Age c) Honesty d) Gender
b)	The square root of the average of squared deviations from the arithmetic mean is known as _____. a) Quartile Deviation b) Standard Deviation c) Variance d) Mean Deviation
c)	The correlation for the values of two variables is r = -1, then it is _____ correlation. a) Perfect positive b) Positive c) Negative d) No correlation
d)	A set of all possible outcomes of a random experiment is known as _____. a) Combination b) Sample point c) Sample space d) Compound event
e)	Normal distribution is applied for _____. a) Continuous Random Variable b) Discrete Random Variable c) Irregular Random Variable d) Uncertain Random Variable
2.	**True or False**
a)	In a Poisson Distribution, the mean and variance are equal.
b)	For any frequency distribution mean is always greater than mode.
c)	The range of correlation coefficient lies between −1 and +1.
d)	Probability of happening and not happening of any event is always equal to zero.
e)	Statistics can be used for the comparison of data.
	SECTION A - K2 (CO1)
	Answer ALL the Questions **(10 x 1 = 10)**
3.	**Fill in the blanks**
a)	_____ is that number which repeat highest number of times in a series.
b)	_____ are those values that divide any set of a given observation into a total of ten equal parts.
c)	The study of nature of relationship between two or more variables is known as _____.
d)	If two events (A and B) are independent, the probability of event A and event B occurring is given by _____.
e)	A standard normal probability distribution is a normal distribution with a mean of _____, and a

	standard deviation of _____.
4.	**Define the following**
a)	Statistics.
b)	Quartile Deviation.
c)	Regression.
d)	Classical Probability.
e)	Mathematical Expectation of X.

SECTION B - K3 (CO2)

Answer any TWO of the following in 100 words **(2 x 10 = 20)**

5. Briefly explain the types of tables used for tabulation of data and list down the parts of a table.

6. Distinguish between Primary data and secondary data using examples.

7. Using suitable diagrams explain the various types of Correlation and Regression.

8. State the theorems of Probability.

SECTION C – K4 (CO3)

Answer any TWO of the following in 100 words **(2 x 10 = 20)**

9. Using the following information, present a Multiple Bar Diagram.

Year	Sales ('000)	Gross Profit ('000)	Net Profit ('000)
2010	100	30	10
2011	120	40	15
2012	130	45	25
2013	150	50	25

10. Calculate Mean Deviation from Mean and Coefficient of Mean Deviation from Mean for the following Data:

Marks:	20	18	16	14	12	10	8	6
No. of Students:	8	4	9	18	27	25	14	1

11. Calculate the Coefficient of correlation for the following data using Actual Mean method:

No. of students:	1	2	3	4	5
Marks in Economics:	48	35	17	23	47
Marks in Statistics:	45	20	40	25	45

12. A. State the Theorems of Mathematical Expectations. [1x5=5 marks]

B. The probability distribution of a random variable 'X' is given below: Find:

(i) E(X) ii) Var (X) iii) SD (X)

X:	-2	-1	0	1	2
P(x):	0.2	0.1	0.3	0.3	0.1

[1x5=5 marks]

SECTION D – K5 (CO4)

Answer any ONE of the following in 250 words **(1 x 20 = 20)**

13. Explain the features, functions, limitations and distrusts of Statistics.

14. A. Explain the properties of Normal Distribution. [1x10=10 marks]

B. The mean yield for one acre plot is 662 kgs with a standard deviation of 32 kgs. Assuming

normal distribution, how many one-acre plots in a batch of 10000 plots would expect yield:

a) Over 700 kgs.

b) Below 650 kgs. [1x10=10 marks]

SECTION E – K6 (CO5)

Answer any ONE of the following in 250 words **(1 x 20 = 20)**

15. Calculate Mean, Median and Mode for the following Series:

Class:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	6	10	10	8	1	3	8

16. Height of fathers and sons are given below. Find the regression line on Height of sons to that of father's height. i.e., Y = a + bX.

Height of Fathers (inches):(X)	71	68	66	67	70	71	70
Height of Sons (inches): (Y)	69	64	65	63	65	62	65

[Hint: Let A = 69 and B = 65 be the assumed means for X and Y series respectively]
