Reg No:..... K25FY2480 B

Name :.....

Second Semester FYUGP Statistics Examination
APRIL 2025 (2024 Admission onwards)
KU2DSCSTA134 (QUANTITATIVE TECHNIQUES IN DATA ANALYSIS-I)
(DATE OF EXAM: 30-4-2025)

Time : 120 min Maximum Marks : 70

Part A (Answer any 6 questions. Each carries 3 marks)

1. What is meant by the term "correlation" in Statistics? 3

2. Without any calculation identify the coefficient of correlation between X and Y from the following data. 3

X	11	12	13	14	15
Y	15	16	17	18	19

3. Can both Pearson's and Spearman's correlation coefficients be used for qualitative data? Justify your answer. 3

4. Define models of time series. 3

5. Briefly explain method of least squares? 3

6. Which trend measurement method is best for long-term forecasting? Why? 3

7. Construct an index number from the following data by using simple aggregative method. 3

Commodity:	A	B	C	E
Price in 2023(Rs):	4	3	4	2
Price in 2024(Rs):	9	5	6	4

8. Define value index number. 3

Part B (Answer any 4 questions. Each carries 6 marks)

9. Given the following pairs of values of the variables X and Y.

X	10	20	30	40	50	60	70	80
Y	32	20	24	36	40	28	48	44

(a)Make a scatter diagram.
(b)Is there any correlation between variables X and Y. 6

10. Explain the significance of the study of correlation. 6

11. From the data given below, calculate Karl Pearson's correlation coefficient: 6

Price of commodity X (Rs.)	10	12	15	14	19
Amount of demand (in '000 units)	40	4	48	60	50

12. Distinguish between seasonal variations, and cyclical fluctuations. How would you measure secular trend in any given data? 6

13. Mention any two methods of measuring trend values.Explain it 6

14. What are the limitations of the least squares method in time series analysis? How do you measure the accuracy of a trend estimated using the least squares method? 6

Part C (Answer any 2 question(s). Each carries 14 marks)

15. Given the bivariate data:

X	1	5	3	2	1	1	7	3
Y	6	1	0	0	1	2	1	5

(a) Find regression line of Y on X and predict Y when X=10
(b) Find regression line of X on Y when Y=2.5
(c) Calculate Karl pearson correlation coefficient

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16. (a) Define line of regression and give its uses (b) From the following data obtain the 2 regression equations . Also find the coefficient of correlation between X and Y.

Sales :	91	97	108	121	67	124	51	73	111	57
Purchase:	71	75	69	97	70	91	39	61	80	47

(c) Predict the value of X when Y= 90

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17. Calculate Laspeyres, Paasches and Fishers indices for the following data. Also examine which of the above indices satisfy
(i) Time reversal test and
(ii) Factor reversal test.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	6.9	500	10.8	560
B	2.8	124	2.9	148
C	4.7	69	8.2	78
D	10.9	38	13.4	24
E	8.6	49	10.8	27

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