Reg No:.....
Name :.....

K25FY2180 C

Second Semester FYUGP Statistics Examination
APRIL 2025 (2024 Admission onwards)
KU2DSCSTA134 (QUANTITATIVE TECHNIQUES IN DATA ANALYSIS-I)
(DATE OF EXAM: 2-5-2025)

Time : 120 min

Maximum Marks : 70

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

1. Distinguish between correlation and regression 3

2. Differentiate between simple and multiple regression 3

3. The regression equation of Y on X is given as Y=2X+3. What is the predicted value of Y when X=7 ? 3

4. List the components of a time series. 3

5. Let y = a+bx, if a = 25, b = 3.5 find y when x = 4. 3

6. 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

7. Define Dorbish-Bowley's index number. 3

8. Define weighted price relative method of constructing an index number. 3

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

9. What are the types of regression? List and briefly explain any two. 6

10. The two lines of regression are 4y=9x+15 and 6y=25x-7 .Identify the regression lines and obtain the coefficient of correlation between x and y 6

11. What are regression lines? Why there are two regression lines? 6

12. The price of four different commodities for 2020 and 2021 are given below. Calculate index numbers for 2020 and 2021 by using
(i) The simple average of price relatives.
(ii) The weighted average of price relatives. 6

Commodities	Unit	Weight (Kg)	Price in 2020 (Rs)	Price in 2021 (Rs)
P	KG	10	4	9
Q	Quintal	14	5	6.4
R	Dozen	12	6	9
S	KG	4	2	3.6

13. What is the difference between price and quantity index numbers? 6

14. Construct Fishers ideal index number from the following data: 6

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	2	40	6	50
B	4	50	8	40
C	6	20	9	30
D	8	10	6	20
E	10	10	5	30

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

15. Following are the percentage figures of expenditures incurred on clothing and entertainment by an average working class family in a period of 10 years:

Years	% Expenditure on clothing (X)	% Expenditure on entertainment (Y)
1999	24	11
2000	27	8
2001	31	5
2002	32	3
2003	20	13
2004	25	10
2005	33	2
2006	30	7
2007	28	9
2008	22	2

Compute:
(i) Pearson's coefficient of correlation between X and Y.
(ii) Spearman's rank correlation coefficient and comment on your results.

14

16. (a) The coefficient of rank correlation of the marks obtained by 10 students in Statistics and Accountancy was found to be 0.2. It was later discovered that the difference in ranks in the two subjects obtained by one of the students was wrongly taken as 9 instead of 7. Find the correct value of coefficient of rank correlation.
(b) Calculate coefficient of correlation by Spearman's method from the following data:

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks in Statistics	45	56	39	54	45	40	56	60	30	36
Marks in Law	40	36	30	44	36	32	45	42	20	36

14

17. What are the different methods used to measure trend in time series analysis? Explain the graphic, semi-averages, moving average, and least squares methods with examples. 14