



K25U 1435

Reg. No. :

Name :

**Second Semester B.Sc. AI and ML Degree (C.B.C.S.S. – O.B.E. –
Supplementary/Improvement) Examination, April 2025
(2023 Admission)**

**Complementary Elective Course
2C02STA AIML : STATISTICAL METHODS**

Time : 3 Hours

Max. Marks : 40

PART – A

(Short Answer)

Answer **all** questions from this Part. **Each** question carries 1 mark.

(6×1=6)

1. When can you say that a correlation is direct ?
2. Define scatter diagram.
3. What do you mean by a regression equation ?
4. Define base period of an index number.
5. Define a composite index.
6. Define the term 'cycle' in time series.

PART – B

(Short Essay)

Answer **any six** questions from this Part. **Each** question carries 2 marks. **(6×2=12)**

7. Distinguish between partial and multiple correlation.
8. Define Spearman's rank correlation coefficient without ties.
9. Define regression analysis.

P.T.O.



10. Explain the regression equation of Y on X.
11. State any two points for the selection of the base period.
12. What do you mean by price quotations?
13. What are the various types of trends?
14. State any two significance of studying trends.

PART – C

(Essay)

Answer **any four** question from this Part. **Each** question carries **3** marks. **(4×3=12)**

15. Write the merits and the limitations of the scatter diagram method of calculating correlation.
16. Compute Spearman's rank correlation for the following observations :

Candidate	1	2	3	4	5	6	7	8
Judge X	20	22	28	23	30	30	23	24
Judge Y	28	24	24	25	26	27	32	30

17. Explain any three differences between correlation and regression analysis.
18. In a correlation study the following values are obtained :

Mean :	X	Y
Standard Deviation :	65	67
Coefficient of Correlation :	2.5	3.5

Find the two regression equations that associated with the above values.

19. Explain simple average of price relatives method of constructing index numbers.
What are its merits ?
20. Explain the least square method for measuring trend of a time series.



PART – D
(Long Essay)

Answer **any two** question from this Part. **Each** question carries **5** marks. (2×5=10)

21. Calculate Karl Pearson's coefficient of correlation from the following data and interpret its value.

Roll no. of Students	1	2	3	4	5
Marks in Accountancy	48	35	17	23	47
Marks in Statistics	45	20	40	25	45

22. From the data, calculate regression equations by taking deviations of X series from 5 and of Y series from 7.

X: 6 2 10 4 8

Y: 9 11 5 8 7

23. Explain Fisher's method. Construct the index number of price from the following data :

Year	2006	2006	2007	2007
Commodity	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

24. The sale of commodity in million tonnes varied from January to December 2011 in the following manner :

280 300 280 280 270 240

230 230 220 200 210 200

Fit a trend line by the method of semi-averages.