



K26U 0867

Reg. No. :

Name :

Second Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary)

Examination, April 2026

(2020 to 2023 Admissions)

COMPLEMENTARY ELECTIVE COURSE IN STATISTICS

2C02STA (G&P) : Statistical Methods

Time : 3 Hours

Max. Marks : 40

Instruction : Use of calculators and statistical tables are permitted.

PART – A

Answer **all** questions. **Each** carries 1 mark.

(6×1=6)

1. Correlation between X and Y is 0.30. If each X values are divided by 2, then the new correlation coefficient will be _____.
2. Let $(X,Y) = (-2,2), (-1,1), (0,0), (1,1), (2,2)$. What is the correlation coefficient between X and Y ?
3. Write down the relationship between correlation coefficient and regression coefficients.
4. Give one use of index number.
5. Which index number is called ideal index number ?
6. Define Crude Death Rate.

PART – B

Answer **any 6** questions. **Each** carries 2 marks.

(6×2=12)

7. Write down the formula for rank correlation coefficient when (i) no ties and (ii) with ties.
8. Why there are two regression lines ?
9. What do you meant by unit test of index numbers ?
10. Give the expressions for additive and multiplicative models in time series.
11. Define vital statistics. Give an example.

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12. Give the names of different methods of measuring trends in time series.
13. Write down any two disadvantages of index numbers.
14. What is meant by vital rates in general ?

PART – C

Answer **any 4** questions. **Each** carries **3** marks.

(4×3=12)

15. From the following information's obtain regression line of Y on X.
 $n = 10, \Sigma x = 666, \Sigma y = 663, \Sigma x^2 = 44490, \Sigma y^2 = 44061, \Sigma xy = 44224$
16. Derive the regression line of X on Y using least squares method.
17. How do you fit a trend line by the method of least squares in a time series data ?
18. Define two different measures of population growth.
19. Give an example to show that dependent variables can have zero correlation.
20. What are the various uses of Vital Statistics in India ?

PART – D

Answer **any 2** questions. **Each** carries **5** marks.

(2×5=10)

21. What is correlation ? What are the two types of correlation ? What are the different methods of measuring correlation ? Show that the correlation coefficient is not affected by change of origin and scale.
22. $(X, Y) = (40, 38), (50, 60), (38, 55), (60, 70), (65, 60), (50, 48), (35, 30)$. Derive regression equation of Y on X. Predict the value of Y when X = 55.
23. Calculate Laspey's and Paasche's price index numbers from the following data :

Commodity	Price in base year	Price in current year	Quantity in base year	Quantity in current year
A	10	15	6	8
B	25	40	10	20
C	30	45	15	12
D	15	30	20	15
E	20	25	8	6

24. What is Time Series ? Describe various components of Time Series.