K25U 3381

Reg. No. : .....

Name : .....

First Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary) Examination, November 2025
(2019 to 2023 Admissions)
COMPLEMENTARY ELECTIVE COURSE IN STATISTICS
1C01STA : Basic Statistics

Time : 3 Hours Max. Marks : 40

***Instruction** : Use of Calculators and Statistical tables are **permitted**.*

PART – A
(Short Answer)

Answer **all 6** questions. **(6×1=6)**

1. Define population and sample.
2. Write any two merits of Geometric mean.
3. What is meant by Quartiles ?
4. What is the variance of a set of values with mean and coefficient of variation are respectively 20 and 60% ?
5. Calculate the coefficient of correlation between x and y, where the regression coefficients are (–16/3) and (–1/12).
6. Write any two uses of index numbers.

PART – B
(Short Essay)

Answer **any 6** questions. **(6×2=12)**

7. Distinguish between primary data and secondary data.
8. What is the formula for combined mean and combined standard deviation ?
9. Define curve fitting and principle of least squares.

P.T.O.

10. Define (i) Price and (ii) Quantity index numbers.

11. Derive an expression for the angle between two regression lines.

12. Prove that correlation coefficient lies between –1 and +1.

13. Why Fisher index number is called ideal index number ? Explain the two tests.

14. Explain the method of semi-average for finding the secular trend in a time series data.

PART – C
(Essay)

Answer **any 4** questions. **(4×3=12)**

15. Define sampling. What is a random sample ? How will you select random sample ?

16. Derive the formula for rank correlation coefficient.

17. Prove that the correlation coefficient is independent of change of origin and scale of measurement.

18. Write a short note on the components of time series.

19. What are the problems in the construction of index numbers and explain them.

20. Explain Kurtosis and Skewness.

PART – D
(Long Essay)

Answer **any 2** questions. **(2×5=10)**

21. Define row moment and central moment. Derive the relationship between them.

22. Obtain the trend of the form $y = ab^x$ from the following data given below :

X	1	2	3	4	5
Y	5.9	11.8	24.2	47	95

23. Calculate Karl Pearson's coefficient of correlation from the following data :

X	104	111	104	114	118	117	105	108	106	100	104	105
Y	57	55	47	45	45	50	64	63	66	62	69	61

24. Find (a) Laspeyre's (b) Paasche's (c) Fisher's index number for the following data :

Commodities	**Base Year**		**Current Year**	
	Price	**Quantity**	**Price**	**Quantity**
A	10	12	12	15
B	7	15	5	20
C	5	24	9	20
D	16	5	14	5