K19U 3337

Reg. No. : .....

Name : .....

I Semester B.Sc. Degree CBCSS (OBE)-Regular Examination, November - 2019

(2019 Admission)

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** questions. (6x1=6)

1. Define a simple random sample.
2. The standard deviation of 5 observations is 2.3. If every observation is increased by 2. Then find the resulting standard deviation.
3. Define coefficient of variation.
4. State principle of least squares.
5. Give the normal equation for the curve $y = ae^{bx}$
6. Give the expression for rank correlation tor the tied observations.

PART-B
(Short Essay)

Answer any **6** questions. (6x2=12)

7. Distinguish between SRSWR and SRSWOR.
8. What do you mean by systematic sampling? Give its advantages over SRS.
9. What do you mean by central tendency? How they can be measured?
10. Obtain the GM of 2,4,8,16 and 32
11. Differentiate between absolute and relative measure of dispersion
12. Define partial correlation.
13. Prove that correlation coefficient is lies between - 1 and + 1
14. Define index numbers.How they can be classified?

P.T.O.

PART -C
(Essay)

Answer any 4 questions. (4x3=12)

15. Show that for a discrete distribution $\beta_2 > 1$
16. Define raw and central moments. Prove the relation connecting between them.
17. Show that with usual notations, $r = \frac{\sigma_x^2 + \sigma_y^2 - \sigma_{x-y}^2}{2\sigma_x\sigma_y}$
18. The variables X and Y are connected by the relation a X+bY+c=0. Show that the correlation between them is -1 if the signs of a and b are alike and +1 if they are different.
19. Explain the different components of a time series.
20. Calculate the Laspeyer's index number for the following data.

Commodity	1982		1983	
	Price	Quantity	Price	Quantity
A	5	100	6	150
B	4	80	5	100
C	2.5	60	5	72
D	12	30	9	33

PART -D
(Long Essay)

Answer any 2 questions (2x5=10)

21. Explain the principle steps in a sample survey.
22. Obtain the moment measure and nature of skewness and kurtosis of the following data.

X:	0	1	2	3	4	5	6	7	8
f:	1	8	28	56	70	56	28	8	1

23. Show that correlation coefficient is invariant under linear transformations.
24. Explain the method of moving averages for determining the trend.