



K21U 3486

Reg. No. : .....

Name : .....



**II Semester B.Sc. Degree (CBCSS - OBE-Reg./Sup./Imp.)  
Examination, April 2021  
(2019 Admission Onwards)  
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  
(Short Answer)**

Answer **all 6** questions.

**(6×1=6)**

1. The correlation between two variables is zero. How will you interpret it ?
2. What are the demerits of scatter diagram ?
3. Give any two uses of index numbers.
4. How will you choose the base period while constructing index numbers ?
5. What do you mean by cyclical variation in a time series ?
6. What do you mean by vital statistics ?

**PART – B  
(Short Essay)**

Answer **any 6** questions.

**(6×2=12)**

7. What do you mean by a bivariate data ? Give an example.
8. Why there are two regression lines ?
9. Prove that correlation coefficient is the geometric mean of regression coefficients.

P.T.O.



10. How will you construct the weighted index numbers ? What are its merits ?
11. Define a time series and give two examples.
12. With suitable examples explain seasonal variation in a time series.
13. Describe any two measures of mortality.
14. Explain the purpose and procedure of standardizing birth and death rates.

**PART – C**  
**(Essay)**

Answer **any 4** questions.

**(4×3=12)**

15. What is effect of change of scale on correlation coefficient ?
16. Write a short note on rank correlation.
17. The regression lines are  $x + y - 32 = 0$  and  $4x + y - 52 = 0$ . Obtain the correlation coefficient and values of means of the variables.
18. Explain the principle of least squares and write down the normal equations for fitting a straight line  $y = ax + b$ .
19. What do you mean by cost of living index number ? What are its uses ?
20. Explain the moving average method for the measuring trend of a time series.

**PART – D**  
**(Long Essay)**

Answer **any 2** questions.

**(2×5=10)**

21. If two variables are independent, their correlation coefficient is zero. Is the converse true ? Explain by means of an example.
  22. By using the following data, find out the two lines of regression.  $\sum x = 250$ ,  $\sum y = 300$ ,  $\sum xy = 7900$ ,  $\sum x^2 = 6500$ ,  $\sum y^2 = 10000$ ,  $n = 10$ .
  23. Explain factor reversal and time reversal tests. Check whether Fisher's index number obey both the tests.
  24. Write short notes on general fertility rate, total fertility rate, gross reproduction rate and net reproduction rate.
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