K19U 0283

Reg. No. : .....

Name : .....

II Semester B.Sc. Degree (CBCSS-Reg./Supple./Improv.) Examination, April 2019
(2014 Admission Onwards)
COMPLEMENTARY COURSE IN STATISTICS
(For Geography/Psychology Core)
Paper – 2C02STA : Statistical Methods

Time : 3 Hours Max. Marks : 40

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

PART – A

Short Answer. Answer **all** the **6** questions : **(6×1=6)**

1. Define Karl Pearsons correlation coefficient.
2. What is the concept of regression ?
3. What do you mean by a weighted index number ?
4. Suggest a test for a good index number.
5. Give the formula for Marshall-Edgeworth index number.
6. What do you mean by civil registration ?

PART – B

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

7. Explain the concept of rank correlation. Also write down the formula for Spearman's rank correlation coefficient.

P.T.O.

8. Define the term 'bias' associated with index numbers.

9. Give two examples for simple index numbers.

10. Give an example of seasonal variation in time series.

11. Explain the use of time series.

12. Briefly explain any two sources of Vital Statistics.

13. Define crude birth rate and age specific fertility rate.

14. Define Gross Reproduction Rate and explain the formula for finding it.

PART – C

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

15. The coefficient of rank correlation between marks in Statistics and marks in Mathematics obtained by a certain group of students is 0.8. If the sum of the squares of the difference in ranks is given to be 33, find the number of students in the group.

16. Explain the fitting of an exponential curve.

17. Explain the construction of a cost of living index number.

18. What are the merits and demerits of least squares method of measuring secular trend in time series ?

19. Compute the trend values by finding three-yearly moving averages for the following time series.

Year	2000	2001	2002	2003	2004	2005	2006
Population (in millions)	412	438	446	454	470	483	490

20. Explain any three measures of mortality.

PART – D

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

21. The following table gives corresponding values of two variables X and Y.

X	1	2	3	4	5
Y	1.8	5.1	8.9	14.1	19.8

It is found that they are connected by a law of the form $Y = aX + bX^2$, where a and b are constants. Find the best values of a and b by the method of least squares. Calculate the value of Y for X = 2.

22. Calculate the correlation coefficient for the following heights (in inches) of Fathers (X) and their Sons (Y).

X	65	66	67	67	68	69	70	72
Y	67	68	65	68	72	72	69	71

23. Discuss the problems in the construction of index numbers.

24. Fit a straight line trend to the following data by the method of least squares. Estimate the probable value for 2018.

Year	2011	2012	2013	2014	2015	2016
Value	10	8	12	9	11	12