K22U 1311

Reg. No. : .....

Name : .....

II Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, April 2022
(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** questions. **(6×1=6)**

1. Define scatter diagram.
2. Give the relation between correlation coefficient and regression coefficients.
3. State principle of least squares.
4. Define simple index numbers.
5. Give any two applications of index numbers.
6. Define time series.

PART – B

(Short Essay)

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

7. Obtain the rank correlation coefficient for tied rank.
8. Explain linear regression.
9. Why there are two regression lines ?

P.T.O.

10. If the two regression coefficients are 0.8 and 0.45. Then what will be its correlation coefficient ?

11. Explain time reversal test of index numbers.

12. Obtain Fisher's index number.

13. What are the components of time series ?

14. Explain standard death rates.

PART – C

(Essay)

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

15. Interpret the value of correlation coefficient for $-1, 0, +1$.

16. Derive Spearman's rank correlation coefficient.

17. Fit the line $y = ax + b$.

18. From the following data construct an index for 2012 taking 2011 as base year.

Commodity	:	A	B	C	D	E
Price in 2011 (Rs.)	:	50	40	80	110	20
Price in 2012 (Rs.)	:	70	60	90	120	20

19. What are the various methods for measuring trends ?

20. What are the use of vital statistics ?

PART – D

(Long Essay)

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

21. Find the Pearson correlation coefficient of the following data :

X :	78	89.	99	60	59	79	68	61
Y :	125	137	156	112	107	136	123	108

22. The two regression lines obtained in a correlation analysis are $2x + 3y = 8$ and $x + 2y = 5$. Find the correlation coefficient.

23. Fit a trend line to the following data by the method of semi averages.

Year :	2008	2009	2010	2011	2012	2013	2014
Sales :	102	105	114	110	108	116	112

24. The following table gives the population of two cities A and B. Compute the CDR and SDR.

Age group	City A		City B	
	Population	Death	Population	Death
Below 5	15,000	360	40,000	1,000
5 – 30	20,000	400	52,000	1,040
Above 30	10,000	280	8,000	240