K16U 2516

Reg. No.: .....

Name: .....

I Semester B.Sc. Degree (CCSS – Reg./Supple./Improv.) Examination, November 2016
COMPLEMENTARY COURSE IN STATISTICS FOR MATHS/ COMP. SCI./ELE. CORE
1C01 STA : Basic Statistics
(2014 Admn. Onwards)

Time : 3 Hours Total Marks : 40

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

PART – A

Short answer. Answer **all** the **6** questions.

1. Define population and sample.
2. Distinguish between probability and non probability samples.
3. Define percentiles.
4. Distinguish between absolute and relative measures of dispersion.
5. Define skewness and kurtosis.
6. Define multiple correlation. **(6×1=6)**

PART – B

Short essay.

Answer **any 6** questions.

7. Explain the various methods of collecting primary data.
8. State the mathematical properties of arithmetic mean.
9. Find the geometric mean for the following data :
   70, 15, 75, 500, 8, 45, 250, 40, 36

P.T.O.

10. Explain various measures of dispersion.

11. Prove that the value of the correlation coefficient lies between-1 and 1.

12. Why there are two regression lines ?

13. Explain components of time series.

14. Prove that Fishers index number satisfies factor reversal test. **(6×2=12)**

PART – C

Essay.

Answer **any 4** questions.

15. Explain simple and stratified random sampling.

16. The mean and standard deviation of a set of 200 observations were worked out as 60 and 20 respectively. At the time of calculation two items were wrongly taken as 3 and 67 instead of 13 and 17. Find the correct mean and standard deviation.

17. Show that independence implies non correlation but not conversely.

18. Derive the expression for the rank correlation coefficient.

19. In a trivariate population $r_{12} = 0.4$, $r_{13} = 0.5$, $r_{23} = 0.6$. Find $r_{1.23}$ and $r_{12.3}$.

20. Explain the least square method for estimating the linear trend in a time series data. **(4×3=12)**

PART – D

Long Essay.

Answer **any 2** questions.

21. Calculate the value of β_1 and β_2 for the following data.

Class	70 – 90	90 – 110	110 – 130	130 – 150	150 – 170
Frequency	8	11	18	9	4

22. The equation of two regression lines are $3x + 12y - 10 = 0$ and $3y + 9x - 46 = 0$. Obtain the mean values of X and Y and correlation coefficient.

23. Calculate the value of the Pearsons coefficient of correlation for the following data.

X	65	63	67	64	68	62	70	66	68	67
Y	68	66	68	65	69	66	68	65	71	67

24. Calculate the Fishers index number for the following data.

Commodity	2000		2010	
	Price	Quantity	Price	Quantity
A	16	40	30	40
B	20	60	26	50
C	8	100	16	120
D	4	80	6	100
E	12	50	10	60

(2×5=10)