D 73302 (Pages : 2) Name.....

Reg. No.....

FIRST SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CBCSS—UG)

Statistics

STA 1C 01—INTRODUCTORY STATISTICS

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Use of calculator and Statistical table are permitted.

Part A (Short Answer Type Questions)

Each question carries 2 *marks.*

Maximum marks that can be scored from this part is 20.

1. Expand : (i) C SO (ii) D E S.
2. Define qualitative and quantitative data.
3. Define time series data.
4. Define : (i) central tendency (ii) average.
5. What is the sum of squares of 10 observations with mean 4 and variance 36 ?
6. Define : (i) H-spread (ii) Upper and Lower inner fences.
7. Write any two relative measures of dispersion.
8. Define curve fitting.
9. Two regression coefficients cannot be greater than 1 simultaneously. Justify.
10. Name the four components of a time series.
11. Define seasonal variation.
12. Define : (i) price and (ii) quantity index numbers.

Part B (Short essay/paragraph type Questions)

Each question carries 5 *marks.*

Maximum marks that can be scored from this part is 30.

13. Write a short note on NSSO.
14. Define primary data. What are the various methods of collecting primary data ?
15. Define moments. Derive an expression for r^{th} central moment in terms of raw moments.

Turn over

16. State principle of least square and explain the fitting of a curve of the form $y = ae^{bx}$ to the the data $(x_1, y_1), (x_2, y_2), ..., (x_n, y_n)$.

17. For the observations $(x_1, y_1), (x_2, y_2), ..., (x_n, y_n)$, derive the regression lines x on y and y on x.

18. Calculate Pearson's coefficient of correlation between X and Y, using the following data :

X	:	2	6	8	11	15	18
Y	:	6	9	10	14	20	21

19. Define secular trend. Explain the method of : (i) free hand curve and (ii) semi average method of finding trend.

Part C (Essay Type Questions)

Each question carries 10 *marks.*
Maximum marks that can be scored from this part is 10.

20. Define skewness. Explain various measures of skewness. Calculate β_1 and comment on skewness of a set of data with first three raw moments 1, 4 and 10.

21. Explain : (i) unweighted index number (ii) weighted index number (iii) Any two uses of index numbers. Calculate Fisher's index number for the year 2017 based on 2010.

Items	Quantity		Price	
	2010	2017	2010	2017
A	12	16	20	24
B	6	9	16	18
C	9	13	8	11
D	19	22	12	18
E	15	20	15	16