D 53695 **(Pages : 3)** **Name.....**

Reg. No.....

FIRST SEMESTER [CBCSS–UG] DEGREE EXAMINATION, NOVEMBER 2023

Statistics

STA 1C 01—INTRODUCTORY STATISTICS

(2019–2023 Admissions)

Time : Two Hours Maximum : 60 Marks

Part A (Short Answer Type Questions)

Each Question carries 2 *marks.*
Maximum marks that can be scored from the part is 20.

1. Expand (i) CSO and (ii) NSSO.
2. Distinguish between questionnaire and schedule.
3. Draw a histogram and a frequency polygon for the following data :

Marks	:	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	:	5	8	15	20	12	7

4. For a frequency distribution, median = 132.8, mode = 141.3, find mean.
5. What are the desirable properties of a good measure of dispersion?
6. Define quartile deviation and write any one demerit of quartile deviation.
7. What are positive and negative skewness ?
8. Distinguish between correlation and regression.
9. Define Karl Pearson's coefficient of correlation and state any one of its property.
10. What are the uses of index numbers ?
11. What do you mean by components of a time series ? List out the components of a time series.
12. What are irregular variations ? How are they differ from cyclical variations ?

Turn over

Part B (Short Essay/ Paragraph Type Questions)

Each question carries 5 marks.

Maximum marks that, can be scored from the part is 30.

13. Discuss the various scaling techniques used for measuring data.

14. Write short note on any two Central Government Statistical Organizations.

15. Draw less than ogive for the following data :

Class	:	0–20	20-40	40-60	60-80	80-100
No. of students	:	10	15	30	35	10

16. Fit a curve of the form $y = ax^b$ for the following data :

x	:	30	35	40	45	50
y	:	120	50	25	8	2

17. The number of employees, average wage per employee and the variance of the wages per employee for two factories is given below :

		Factory A	Factory B
Number of employees	:	100	150
Average wage per employee per day (Rs)	:	3200	2800
Variance of the wages per employee per day (Rs)	:	625	729

In Which factory is there greater variation in the distribution of wages per employee ?

18. If $9x - 4y + 15 = 0$ the regression line of y on x and $25x - 6y - 7 - 0$ is the regression line of x on y, find r_{xy}.

19. Calculate Karl Pearson's coefficient of correlation for the following data :

x	:	12	9	8	10	11	13	7
y	:	14	8	6	9	11	12	3

Part C (Essay Type Questions)

Answer any **one** *question.*
The question carries 10 *marks.*
Maximum marks that can be scored from the part is 10.

20. (i) Explain the method of semi-average for finding trend.

(ii) Fit a trend line to the following data using semi-average method : .

Year	:	2010	2011	2012	2013	2014	2015
Profit	:	34	34	34	34	32	39

21. Find the mean deviation from the median for the following data :

Size	:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	:	7	12	18	25	16	14	8