TB241143Z

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S.) EXAMINATION, NOVEMBER 2023

2023 ADMISSIONS REGULAR

SEMESTER I CORE FOR COMPUTER APPLICATIONS

ST1C01B23 - DESCRIPTIVE STATISTICS

Time : 3 Hours **Maximum Marks : 80**

Part A

I. Answer any Ten questions. Each question carries 2 marks **(10x2=20)**

1. What are the advantages of Primary data?
2. Explain Stratified Sampling.
3. Explain Lottery method of selecting a simple random sample.
4. Find the geometric mean of 1/16 and 4/25
5. Give the formula for combined Standard deviation of two sets of observations.
6. Find the standard deviation of the observations 7, 9, 16, 24, 26
7. Find the standard deviation of the following observations by the direct method. 20, 25, 35, 40, 15, 10.
8. Distinguish between positive and negative skewness.
9. What is Sheppard's correction? What will be the correction for first four central moments?
10. What are uses of consumer price index numbers
11. What is circular test of index numbers?
12. What is Cost of living Index number?

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Distinguish between primary and secondary data and give their advantages and disadvantages
14. Explain the different parts of a Statistical table.
15. Show that the sum of the absolute values of deviations of observations is minimum when taken about median.
16. Derive the expression for the combined standard deviation of two groups of observations with n_1, n_2 observations, means $\bar{x}_1$ and $\bar{x}_2$ and standard deviations σ_1 and σ_2 respectively.
17. Find mode graphically from the following data

class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
frequency	8	7	15	18	22	14	10	6

18. Write the relation between raw moments about a and the central moments
19. Explain the term 'kurtosis'. Discuss the the different types of kurtosis
20. Define the rth moment of a variable about a point A. Show that the first moment about the mean is 0 and the second moment about the mean is the variance.
21. Explain Laspeyre's index number.

Part C

III. Answer any Two questions. Each question carries 15 marks **(2x15=30)**

22. Define co-efficient of variation. A factory produces two types of electric lamps A and B. In an experiment relating to their lives, the following data was obtained. Compare the variability of the lives of the two types of lamps using co-efficient of variation.

Life in hours	No. of lamps	
	Type A	Type B
500-700	5	4
700-900	11	30
900-1100	26	12
1100-1300	10	8
1300-1500	8	6

23. Define co-efficient of variation. The yields of two varieties of wheat each cultivated in 10 locations are given below

Variety	Yield (kg/plot)									
A	21.6	29.5	27.3	41.6	38.4	39.2	41.1	46.5	40.0	47.1
B	23.5	27.4	23.8	28.3	24.6	25.2	27.3	27.1	25.6	29.1

Find out the yield of which variety is relatively more consistent.

24. Explain the kurtosis. Find β_2 and comment on the kurtosis of the following distribution.

Variable	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Frequency	3	5	9	21	15	10	7

25. (a) Calculate the Simple Arithmetic Mean index numbers for 1978 and 1981 with 1970 as base from the following data giving the prices of 6 commodities in these years.

Commodity	1	2	3	4	5	6
Price in 1970	25	30	16	18	30	42
Price in 1978	30	45	32	30	35	43
Price in 1981	33	36	35	28	38	50

(b) Out of the two formulae, Laspeyre's and Paasche's state the one that would you prefer for the construction of cost of living index? Justify your answer.