SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Com.(PA) END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - II
21UPAAT2002 - Business Statistics

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Sketch the usage of Lorenz Curve.
2. Calculate the coefficient of correlation between x and y from the following data:

X	1	3	5	8	9	10
Y	3	4	8	10	12	11

3. Calculate price index number for 1945 by (a) Bowley's method and (b) Fisher's method.

Commodity	**1935**		**1945**	
	Price (in Rs.)	**Quantity (in Rs.)**	**Price (in Rs.)**	**Quantity (in Rs.)**
A	4	50	10	40
B	3	10	9	2
C	2	5	4	2

4. Illustrate the splicing and deflating in constructing the index numbers.
5. A random sample of 200 tins of coconut oil gave an average weight of 4.95 kgs with a standard deviation of 0.21 kg. Do we accept the hypothesis of net weight of 5 kgs per tin at 1% level?
6. (i) Define the term Probability. (ii) Two players, Sangeet and Rashmi, play a tennis match. The probability of Sangeet winning the match is 0.62. Calculate the probability that Rashmi will win the match.
7. Find the mode of the following distribution:

Class Limits	**Frequency**
46-50	2
51-55	3
56-60	5
61-65	7
66-70	9
71-75	11
76-80	7
81-85	2
86-90	3
91-95	1

Contd...

8. From the following data test if the difference between the variances is significant at 5% level of significance.

Sum of squares of deviations from the mean	84.4	102.6
Size	8	10
Sample	A	B

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Explain the various methods of collection of Data.

10. Calculate Karl Pearson's Coefficient of Correlation from the following data, using 20 as the working mean for the price and 70 as the working mean for demand.

Price	14	16	17	18	19	20	21	22	23
Demand	84	78	70	75	66	67	62	58	60

11. Determine Fisher's index number to the following data.

	2022		**2023**	
Product	**Rs.**	**Kg.**	**Rs.**	**Kg.**
Food	40	12	65	14
Fuel	72	14	78	20
Cloth	36	10	36	15
Wheat	20	6	42	4
Others	46	8	52	6

Also show that it satisfies Time Reversal Test.

12. A problem is given to three persons P, Q, R whose respective chances of solving it are 2/7, 4/7, 4/9 respectively. Find out the probability that the problem is solved.

13. A survey on cars had conducted in 2011 and determined that 60% of car owners have only one car, 28% have two cars, and 12% have three or more. Supposing that you have decided to conduct your own survey and have collected the data below, determine whether your data supports the results of the study.
Use a significance level of 0.05. Also, given that, out of 129 car owners, 73 had one car and 38 had two cars.
NOTE: Using the table, the critical value for a 0.05 significance level with df $= 2$ is 5.99.

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