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. BIM - END SEMESTER EXAMINATIONS - NOV'2024
SEMESTER - I
21UBBAT1001 - Business Statistics

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

Section B

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

1. Define:
   a. Raw data b. Class- Interval.

2. Find the mean for the following distribution.

$\mathbf{x}_i$	11	14	17	20
$\mathbf{f}_i$	3	6	8	7

3. The following table shows the sales and advertisement expenditure of a form

	Sales	**Advertisement Expenditure (Rs. Crores)**
Mean	40	6
SD	10	1.5

   Coefficient of correlation r= 0.9. Estimate the likely sales for a proposed advertisement expenditure of Rs.10 crores.

4. Consider the time series data given below:

$\mathbf{x}_i$	8	3	2	10	11	3	6	5	6	8
$\mathbf{y}_i$	4	12	1	12	9	4	9	6	1	14

   Use the least square method to determine the equation of line of best fit for the data.

5. From the following data, construct Index Numbers for 2018-2019, taking 2010-2011 as the base year by using the Simple Aggregate Method.

Commodity	**Price in 2010-2011 (₹/l)**	**Price in 2018-2019 (₹/l)**
Milk	50	70
Juice	30	40
Shake	70	90
Smoothie	100	150

Contd...

6. Prepare a frequency table of the following scores obtained by 50 students in a test:
   42, 51, 21, 42, 37, 37, 42, 49, 38, 52, 7, 33, 17,44, 39, 7, 14, 27, 39, 42, 42, 62, 37, 39, 67, 51,53, 53, 59, 41, 29, 38, 27, 31, 54, 19, 53, 51, 22,61, 42, 39, 59, 47, 33, 34, 16, 37, 57, 43.

7. Calculate the regression coefficient for the following data:

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

8. What are the causes of variation in Time Series Data?

Section C

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

9. Sketch the overview of Collection and Tabulation of Data.

10. The number of vehicles sold by a major Toyota Showroom in a day was recorded for 10 working days. The data is given as –

Day	**Frequency**
1	20
2	15
3	18
4	5
5	10
6	17
7	21
8	19
9	25
10	28

    Find the Quartile Deviation and its coefficient for the given discrete distribution case.

11. Find the means of X and Y variables and the coefficient of correlation between them from the following two regression equations:
    2Y–X–50 = 0
    3Y–2X–10 = 0.

12. Given below are the data relating to the sales of a product in a district.
    Fit a straight-line trend by the method of least squares and tabulate the trend values.

Year	1995	1996	1997	1998	1999	2000	2001	2002
Sales	6.7	5.3	4.3	6.1	5.6	7.9	5.8	6.1

Contd...

13. The following are the price and quantity of four commodities A, B, C, and D, in 2015 and 2020. Construct index number of prices in the year 2020 using Fisher's Method.

Commodity	**2015**		**2020**	
	Price	**Quantity**	**Price**	**Quantity**
A	10	9	5	12
B	15	4	3	15
C	9	13	8	20
D	8	7	6	2

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