

B.B.A. Semester - 3 (NEP-2020) Examination**OCT/NOV-2024****Elements of Business Statistics (Multidisciplinary Course)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que.1 Find the skewness and coefficient of skewness by Karl Pearson's method from the following data (10)
about annual tax of 100 companies.

Annual tax (lacs Rs.)	0-20	20-40	40-60	60-80	80-100	100-120
No. of companies	5	20	40	25	6	4

OR

- Que.1 The data about rainfall (in cm) at a place in a month during monsoon are obtained as follows
Find the skewness and coefficient of skewness using Bowley's method.

Rainfall (cm)	6	7	13	5	15	20
No. of days	10	5	3	8	3	2

- Que.2 (A) Write short notes : Simple Random Sampling. (05)
(B) The observations of a population are 1, 2, 3, 4, 5, and 6. Write all possible samples of size 2, without replacement verify that (1) Sample mean is an unbiased estimate of population mean. (2) Variable of sample mean. (05)

OR

- Que.2 (A) Write short notes : Stratified Random Sampling. (05)
(B) Obtain the population mean and variance of the stratified mean from the following data : (05)

Group	Number	Mean	variance	Sample size
A	40	5	10	8
B	30	7	8	6
C	30	6	9	6

- Que.3 (A) what is quantity index number? (05)
(B) state the characteristics of index number. (05)

OR

- Que.3 Find the I_L , I_P and I_F using the following data for the year 2022 by taking the year 2021 as the base year. (10)

Item	Base year 2021		Current year 2022	
	Par unit price	Quantity	Par unit price	Quantity
A	5	40	9	50
B	7	15	11	25
C	4	10	8	12
D	10	4	16	6
E	15	3	20	5

- Que.4 Find Karl Pearson's correlation coefficient between x and y. (10)

x	9	8	5	3	2	-2
y	18	16	10	6	4	-4

OR

- Que.4 Find out the Spearman's rank correlation coefficient:

x	6	7	9	10	8	8	9	7	3
y	30	34	36	37	34	34	35	36	29

- Que.5 Find the equations of regression lines from the following data: (10)

X	28	41	40	38	35	33	46	32	36	33
y	30	34	31	34	30	26	28	31	26	31

OR

- Que.5 What is regression? Give the properties of regression coefficients.
