647510 **BBAebMD203B-3C** **Seat No :________**

B.B.A. Semester - 3 (NEP-2020) Examination
OCT/NOV-2025
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 (A) Explain types of skewness. (05)

(B) What is desperation? Which parameters are used for measuring desperation. (05)

OR

Que.1 (A) The frequency distribution of profits earned by 150 companies during the year 2015 - 2016 is as follows. Find the coefficient of skewness by Bowley's method. (05)

Profit (Lakh Rs.)	Less than 10	10 - 20	20 - 30	30 - 40	40 and above
No. of companies	15	30	50	40	15

(B) Which of the following populations is closer to symmetry? (05)

Population A: mean = 56, mode = 60 and S.D. = 24

Population B: mean = 56, median = 60 and S.D. = 30

Que.2 (A) Explain Simple Random Sampling Method. (05)

(B) Explain Stratified Random Sampling Method. (05)

OR

Que.2 (A) If random sample of size 3 are taken without replacement from a population having its observations 1, 5, 9, 11, 14. prepare a list of all possible random samples then verify mean of population is equal to mean of sample mean also find variance of sample mean. (05)

(B) A population is divided into 3 strata and information regarding them is as follows $N_1 = 50$, $N_2 = 90$, $N_3 = 60$ $S_1^2 = 25$, $S_2^2 = 30$, $S_3^2 = 20$. (05)

Simple Random Samples obtained from these start are as follows:

First stratum : 2, 6, 8, 3, 1

Second Stratum : 5, 6, 10, 8, 9, 13, 11, 18

Third Stratum : 4, 2, 9, 11, 3, 7

Find mean and variance of stratified random sample mean.

Que.3 (A) Explain Fisher Index Number is Ideal Index Number. (05)

(B) Explain Cost of living Index Number (05)

OR

Que.3 (A) A worker spends Rs. 400 per month for his family. His cost of leaving index is Rs.250 for the month. His monthly expenditure for different items expect House Rent and Clothing is given below (05)

Group	Food	clothing	House
Index No.	225	256	275
Expense(Rs.)	160	?	?

Estimate his House Rent and clothing.

(B) Find I_L, I_P and I_F from the following data. (05)

Items	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	25
E	8	40	10	26

Que.4 (A) Explain Types of correlation. (05)

(B) Explain Scatter Diagram Method. (05)

OR

Que.4 (A) Find Correlation Coefficient for the following data. (05)

X	129	137	138	134	138	136	140
Y	97	95	93	92	96	94	98

(B) Find 'r' if $n = 12$, $\sum x = 120$, $\sum y = 130$, $\sum (x - 8)^2 = 150$, $\sum (y - 10)^2 = 200$, $\sum (y - 8)(y - 10) = 50$. (05)

Que.5 (A) Why there are two lines of regression? (05)

(B) Write properties of regression coefficient. (05)

OR

Que.5 Obtain two regression lines from the following data. (10)

y \ x	90-100	100-110	110-120	120-130
50-55	4	7	5	2
55-60	6	10	7	4
60-65	6	12	10	7
65-70	3	8	6	3

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