Reg. No. | | | | | | | | | | | |

BCMCMCN 302

Third Semester B.Com. Degree Examination, Dec. 2023/Jan. 2024
(NEP 2020) (2022-23 Batch Onwards)
BUSINESS STATISTICS (DSCC)

Time : 2 Hours Max. Marks : 60

SECTION – A

Answer **any five** of the following questions : **(2×5=10)**

1. Define standard deviation.
2. If the mode of data is 18 and the mean is 24 then find the median.
3. The coefficient of variation of the given data is 58% and the standard deviation is 2.32. Find the Arithmetic Mean.
4. When mean = 123, mode = 120 and Karl Pearson's coefficient of Skewness = 0.3, find the coefficient of variation.
5. The measure of skewness for a certain distribution is – 0.8. If the lower and upper quartiles are 44.1 and 56.6 respectively, find the median
6. Calculate probable error when correlation (r) is 0.8 with n = 16.
7. What do you mean by index number ?
8. If the probability of a defective bolt is 0.2, find the mean and standard deviation of defective bolts in a total of 900 bolts.

P.T.O.

SECTION – B

Answer **any four** of the following questions : **(5×4=20)**

9. You are given below the following information about expenditure on advertisement and sales :

	Adv. Expenses (X) (In Lakhs)	**Sales-Y (In lakhs)**
Mean	10	90
Standard deviation	3	12
The correlation coefficient is 0.8		

a) Find the likely sales when advertisement expenditure is Rs. 15 Lakhs.

b) What should be the advertisement expenditure if the company wants to attain a sales target of Rs. 120 lakhs ?

10. If from a pack of cards, a single card is drawn, what is the probability that it is either a spade or a King ?

11. The odds in favour of "A" winning a game of chess against "B" are 3:2. If 3 games are to be played, what are the odds

i) In favour of A's winning at least two games out of three.

ii) Against A losing the first two games to B.

12. Compute the cost-of-living index number using family budget method :

Item	**Weight**	**Price index**	
Rice	12	40	36
Sugar	8	38	40
Tea	6	120	70
Pepper	1	600	700
Others	3	45	25

13. State the properties of the normal distribution.

14. If on an average, rain falls on 12 days in every 30 days, find the probability that rain will fall on just three days of a given week.

SECTION – C

Answer **any two** of the following questions : **(15×2=30)**

15. Calculate Fisher's ideal index number for the following data. Show that it satisfies Time Reversal and Factor Reversal Test.

Commodity	Base Year		Current Year	
	Price	Expenditure	Price	Expenditure
A	8	40	20	100
B	2	20	6	48
C	1	15	2	60
D	2	24	5	50
E	1	10	5	70

16. Calculate the coefficient of correlation between the values of X and Y given below :

X	65	66	67	67	68	69	70	72
Y	67	68	65	68	72	72	69	71

17. Calculate Mean, Median and Mode for the following data :

Marks below	10	20	30	40	50	60	70	80
No. of students	5	13	20	32	60	80	90	100

18. In an intelligent test administered on 1000 students, the average was 42 and standard deviation 24, find :

    a) The number of students exceeding a score of 50.

    b) The number of students lying between 30 and 54.

    c) The value of score exceeded by top 100 students.