

Reg. No. :

Name :

**Fourth Semester B.Com. LL.B (Five Year Integrated) Degree Examination,
February 2023**

Paper III : BUSINESS STATISTICS

(2020 Admission)

Time : 3 Hours

Max. Marks : 80

I. Answer any **five** of the following. **Each** question carries **2** marks.

1. What is Scatter Diagram?
2. Distinguish between Probability and Non Probability method of sampling.
3. What do you mean by (a) Sensex and (b) Nifty
4. What is a histogram?
5. State the relationship between Correlation and regression co efficient.
6. What do you mean by Time Series Analysis?
7. List out different component parts of a table.

(5 × 2 = 10 Marks)

II. Answer any **four** of the following. **Each** question carries **4** marks.

8. Write a note on Base shifting in case of index numbers.
9. State any four limitations of statistics.
10. What do you mean by simple, partial and multiple correlation?

11. Briefly explain (a) Secular trend and (b) Irregular fluctuation.
12. The correlation coefficient between the variables X and Y is 0.60. If SD of X is 1.50, SD of Y is 2.00, Mean of X is 10 and Mean of Y is 20, find the regression equation X on Y and Y on X.

(4 × 4 = 16 Marks)

III. Answer any **four** of the following. Each question carries 6 marks.

13. State the important features of Statistics.
14. Explain the steps in constructing index number.
15. Two judges in a dance competition rank the 12 entries as follows:

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

What degree of agreement is there between the judgment of two judges based on Spearman's rank correlation?

16. An enquiry into the budgets of the middle-class families in a certain city gave the following information.

Expense on item	Food	Fuel	Clothing	Rent	Miscellaneous
	(35%)	(10%)	(20%)	(15%)	(20%)
Price (in Rs.) in 2020	1500	250	750	300	400
Price (in Rs.) in 2010	1400	200	500	200	250

What is the cost of living index of 2020 as compared with 2010?

17. Obtain Mean and Standard Deviation for the data on scores given below.

Score	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of Students	10	15	25	25	10	10	5

(4 × 6 = 24 Marks)

IV. Answer any **three** of the following. **Each** question carries **10** marks.

18. From the following find out Fishers Price Index and also prove Time Reversal and Factor reversal test are satisfied by it.

Commodity	Year 2015		Year 2020	
	Price	Quantity	Quantity	Price
A	10	8	10	12
B	15	12	15	20
C	9	7	10	10
D	12	6	9	15

19. From the following data of the age of Husband and the age of Wife, form the two regression equations.

Husband's Age : 36 23 27 28 28 29 30 31 33 35

Wife's Age : 29 18 20 22 27 21 29 27 29 28

Also calculate (a) husband's age when the wife's age is 19 and (b) Wife's age when the husband's age is 40.

20. Obtain the straight-line trend equation and tabulate against each year after estimation of the trend and short-term fluctuations. Also estimate the trend value for 2021.

Year : 2011 2012 2013 2014 2015 2016 2017 2018

Value : 400 650 720 690 620 670 950 1040

21. The following table gives the result of the Plus Two Examination held in 2020.

Age of candidates : 17 18 19 20 21 22 23 24 25

Percentage of failures : 39 41 46 34 37 39 49 47 55

Calculate coefficient of correlation and estimate probable error.

(3 × 10 = 30 Marks)