(Pages : 3) **U – 4100**

Reg. No. : .....

Name : .....

Fourth Semester B.Com. LL.B. (Five Year Integrated) Degree Examination, March 2025

Paper III – BUSINESS STATISTICS

(2013-2019 Admission)

Time : 3 Hours Max. Marks : 80

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

1. Define Statistics.
2. What is a probable error?
3. What do you mean by Cost of living index?
4. What do you mean by dependent and independent variables?
5. Find out the value of Median of Mode and Mean are 32.1 and 35.4 respectively.
6. What is systematic sampling?
7. What is a line of best fit?

(5 × 2 = 10 Marks)

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

1. What are the limitations of statistics?
2. What are the differences between correlation and regression analysis?
3. Explain the utilities of time series analysis.
4. What are the different types of correlation?

P.T.O.

5. Find the two regression equations from the following values.

	X	Y
Mean	65	67
Standard Deviation	2.5	3.5
Coefficient of Correlation	0.8	

(4 × 4 = 16 Marks)

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

1. What is non probability sampling? Explain the various types of non probability sampling.

2. Define time series. What are the components of time series?

3. Arithmetic mean of 100 items is 34. At the time of calculation three items 118, 70 and 19 were wrongly taken a 180, 17 and 90 respectively. What is the correct Mean?

4. Calculate Standard Deviation from the following data :

Wages (Rs. '000) :	0-10	10-20	20-30	30-40	40-50	50-60
No.of workers :	12	17	23	39	16	3

5. Calculate the 3-yearly moving averages of the production figures given below :

Year	Production (In tonnes)	Year	Production (In tonnes)
1997	15	2005	63
1998	21	2006	70
1999	30	2007	74
2000	36	2008	82
2001	42	2009	90
2002	46	2010	95
2003	50	2011	102
2004	56		

(4 × 6 = 24 Marks)

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

1. Find Karl Pearson's coefficient of Correlation from the following series of marks secured by 10 students in a class test in Mathematics and Statistics

Marks in Mathematics :	45	70	65	30	90	40	50	75	85	60
Marks in Statistics :	35	90	70	40	95	40	60	80	80	50

2. From the following data construct a price index numbers by using the appropriate formula :

Commodity	Base Year		Current Year	
	Price per unit	Expenditure (Rs.)	Price per unit	Expenditure (Rs.)
A	Q	40	5	75
B	4	16	8	40
C	1	10	2	24
D	5	25	10	60

3. A box contains 3 red and 7 white balls. One ball is drawn at random and in its place a ball of the other colour is put in the box. Now one ball is drawn at random from the box. Find the probability that it is red.

4. The following data relate to advertisement expenditure (in lakh of rupees) and their corresponding sales (in crore of rupees).

Advertisement expenditure :	10	12	15	23	20
Sales :	14	17	23	25	21

Estimate :

(a) The sales corresponding to advertising expenditure of Rs. 30 lakh and

(b) The advertisement expenditure for a sales target of Rs. 35 crore.

(3 × 10 = 30 Marks)