

Exam. Code : 108501
Subject Code : 2063

B.Com. 1st Semester
BUSINESS STATISTICS
Paper—BCG-106

Time Allowed—3 Hours] [Maximum Marks—50

Note :—Attempt any **FIVE** questions, selecting at least **ONE** question from each section and the fifth question may be attempted from any section. Each question carries 10 marks.

SECTION—A

1. Find the mean, median and modal ages of married women at first child birth. 10

Age at the birth of first child	No. of married women
13	37
14	162
15	343
16	390
17	256
18	433
19	161
20	355
21	65
22	85
23	49
24	46
25	40

2. Explain the meaning and scope of statistics. 10

SECTION—B

3. (a) Distinguish between correlation and regression. Discuss the properties of regression. 4
(b) From the following data calculate the rank correlation coefficient after making adjustment for tied ranks. 6

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

4. Goals scored by two teams A and B in a football season were as follows :

Number of goals scored in match	Number of matches	
	A team	B team
0	27	17
1	9	9
2	8	6
3	5	5
4	4	3

By calculating the coefficient of variation in each case, find which team may be considered more consistent.

10

SECTION—C

5. (a) What do you understand by Index Numbers ? Explain the various problems faced in the construction of Index Numbers. 5

- (b) Compute a price index for the following by
 (i) Simple aggregate and (ii) Average of price
 relative method by using both arithmetic mean
 and geometric mean : 5

Commodity	A	B	C	D	E	F
Price in 2018 (Rs.)	20	30	10	25	40	50
Price in 2019 (Rs.)	25	30	15	35	45	55

6. Find Laspeyre's, Paasche's and Fisher's Ideal Price
 Index Numbers from the following data and test their
 adequacy with respect to Time Reversal and Factor
 Reversal Tests. 10

Commodity	P_0	Q_0	P_1	Q_1
A	3	6	5	6
B	4	7	5	8
C	5	4	8	4
D	6	5	9	5

SECTION—D

7. Assuming a four-yearly cycle, calculate the trend by
 the method of moving averages from the following
 data relating to the production of tea in India. 10

Year	Production (in million lbs)
2009	464
2010	515
2011	518

Year	Production (in million lbs)
2012	467
2013	502
2014	540
2015	557
2016	571
2017	586
2018	612

8. (a) Define Probability. Explain various theorems of probability. 5
- (b) The CEO of a company plans to take two of his executives to a conference in Chicago. He plans to select at random one of the eight executives in finance and one of the ten executives in marketing. Of the executives in finance, two have already travelled with the CEO while three of the executives in marketing have travelled with CEO before. What is the probability that :
- (i) Both the executives have travelled with him before ?
 - (ii) At least one of the executives selected has travelled with him before ?
 - (iii) None of the executives chosen has travelled with the CEO before ?
 - (iv) The finance executive has, and the marketing executive has not, travelled with the CEO before ? 5