

Exam. Code : 108501

Subject Code : 1985

**B.Com. 1<sup>st</sup> Semester (Batch 2021-24)**

**BUSINESS STATISTICS**

**Paper—BCG-106**

Time Allowed—3 Hours]

[Maximum Marks—50

**Note** :—Attempt **FIVE** questions in all selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

**SECTION—A**

1. Write the importance of statistics to the businessman, the economist and the government.
2. Find out the median and the mode for the following table :

No. of days absent	No. of students
Less than 5	29
Less than 10	224
Less than 15	465
Less than 20	582
Less than 25	634
Less than 30	644
Less than 35	650
Less than 40	653
Less than 45	655

**SECTION—B**

3. Calculate the Pearson's coefficient of correlation from the following taking 100 and 50 as the assumed average of X and Y respectively :

X	104	111	104	114	118	117	105	108	106	100	104	105
Y	57	55	47	45	45	50	64	63	66	62	69	61

4. (a) Particulars regarding the income of two villages are given below :

	Village A	Village B
No. of people	600	500
Average income	175	186
Variance of income	100	81

- (i) In which village is the variance of income greater ?  
 (ii) What is the total income of both the villages put together ?  
 (iii) What is the average income of the people of both the villages put together ?  
 (iv) What is the combined standard deviation ?  
 (b) Calculate coefficient of quartile deviation and coefficient of variation from the following data :

Marks	No. of Students
Below 20	8
Below 40	20
Below 60	50
Below 80	70
Below 100	80

5,5



**SECTION—C**

5. Calculate the Laspeyre's, Paasche's and Fisher's Ideal Index number for the following data, treating 2018 as the base year.

Commodity	2018		2019	
	Quantity	Price	Quantity	Price
Wheat	562	170	632	72
Rice	535	192	756	70
Sugar	639	195	926	95
Ghee	128	187	255	92
Fuel	542	185	632	92
Gold	217	150	314	180

6. Calculate quantity index by (i) Laspeyre's method, (ii) Paasche's method, (iii) Fisher's method.

Year Commodity	Price $P_0$	2014	Price $P_1$	2016
		Total Value $(P_0Q_0)$		Total Value $(P_1Q_1)$
A	10	100	12	144
B	12	144	14	196
C	14	196	16	256
D	16	256	18	324
E	18	324	20	400

**SECTION—D**

7. Take a five-yearly period of moving average and determine short-term oscillations from the following data :

Year	Production (000)
2004	14
2005	17
2006	22
2007	28
2008	26
2009	18
2010	20
2011	24
2012	25
2013	29
2014	30
2015	23

8. The sale of company in thousands of rupees for the year 2009 to 2015 are given below :

Year	2009	2010	2011	2012	2013	2014	2015
Sales	32	47	65	92	132	190	275

Estimate sales figures for the year 2016 using an equation of the form  $Y = ab^X$ , where  $X = \text{Years}$  and  $Y = \text{Sales}$ .