

Exam. Code : 121101

Subject Code : 102632

B.Com. (Hons.) 1st Semester (Batch 2024-28) (CBGS)

BUSINESS STATISTICS

Paper-BCO01008T

Time Allowed—3 Hours]

[Maximum Marks—100

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. (a) Define Statistics. Discuss the functions of Statistics.
- (b) From the following frequency distribution, calculate the missing frequency x when the value of median is 86.

Classes	Frequency
45-50	2
50-60	1
60-70	6
70-80	6
80-90	x
90-100	12
100-110	5

10,10

2. Calculate Mean, Median and Mode for the following table :

No. of days absent	No. of students
Less than 5	29
Less than 10	239
Less than 15	469
Less than 20	584
Less than 25	634
Less than 30	644
Less than 35	650
Less than 40	655

SECTION—B

3. Calculate Quartile Deviation, Mean Deviation, Standard Deviation and Coefficient of Variation from the following data :

Income (Rs.) Less than	No. of Families
700	12
800	30
900	50
1000	75
1100	110
1200	120

4. Ten students of M.A. obtained the following percentage of marks in English in the Internal Assessment (x) and University Examination (y). Calculate Karl Pearson's coefficient of correlation.

x	50	60	75	84	47	52	59	44	33	46
y	45	52	50	65	40	65	50	60	32	51

SECTION—C

5. What are Index Numbers ? Differentiate between simple and weighted index numbers. Explain the importance of weighting in the construction of index numbers. Enumerate the methods of weighting a price index and discuss their relative merits and demerits.
6. Calculate the Consumer price index number by (i) Aggregative expenditure method and (ii) Family budget method for the year 2023 taking 2019 as the base.

Commodity	Quantity	Price (Rs.)	
		2019	2023
https://www.gnduonline.com			
Wheat	2 quintals	50	75
Rice	25 kg	100	120
Sugar	10 kg	80	120
Pure Ghee	5 kg	10	10
Veg. Ghee	5 kg	3	5
Oil	25 kg	200	200
Clothing	25 metres	4	5
Fuel	4 quintals	8	10
Rent	1 house	20	25

SECTION—D

7. From the following data, estimate the trend values for 2024 by (i) least square method and (ii) 4-yearly moving average.

Year	Sales (in lakhs)
2013	200
2014	120
2015	280
2016	240
2017	160
2018	320
2019	360
2020	400
2021	320
2022	360
2023	360

8. (a) A bag contains four red balls and six black balls. A ball is picked at random from the bag and not replaced. A second ball is then picked. Calculate the following probabilities : (i) The second ball is red, given that the first is red, (ii) Both the balls are red and (iii) The balls are of different colours.
- (b) Two events D and E are found to have the following probability relationships : $P(D) = 1/3$, $P(E) = 1/4$ and $P(D \text{ or } E) = 1/2$. Calculate the following probabilities : (i) $P(D \text{ and } E)$, (ii) $P(D/E)$ and (iii) $P(E/D)$. 10,10