B.Com. Semester-II Examination, 2022-23

COMMERCE [Honours]

Course ID : 21212 Course Code : BCOMH/202/C-4

Course Title : Business Statistics

Time : 2 Hours Full Marks : 40

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** of the following questions: 2×5=10

a) Find the mode of the following numbers:

22, 27, 25, 23, 26, 27, 28, 25, 27, 22.

b) Find the standard deviation of the first four even numbers.

c) What are the three measures of central tendency? Define any two of them.

d) Find the correlation coefficient if $\sigma_x^2 = 6.25$, $\sigma_y^2 = 4$ and COV (x, y) = 0.9.

e) Write down the relationship between variance and standard deviation.

f) Find the mean deviation about mean for the following distribution: 7, 9, 24, 14, 26.

g) The Regression equation of y on x is $3x - 4y + 61 = 0$ and the arithmetic mean of y is 52. What will be the arithmetic mean of x?

h) Find the second moment of the data 5, 7, 9 about the value 3.

2. Answer any **four** of the following questions: 5×4=20

a) Two samples of size 60 and 90 have 52 and 48 as the respective AM and 9 and 12 as the respective SD. Find the AM and SD of the combined sample of size 150.

b) From the following data calculate Paasche's quantity index number for the year 2021 with 2011 as base:

Commodity	Quantity		Value
	2011	2021	2021
A	54	25	540
B	93	75	825
C	18	56	448
D	6	8	56
E	23	47	141

c) Find the mode of the following data:

Class	0-100	100-200	200-300	300-400	400-500	500-600
Frequency	64	62	77	62	66	54

d) Does the correlation coefficient depend on the origin of reference and unit or scale of two variables? Hence solve the problem: Given $r_{xy} = 0.8$. If $u = x + 5$ and $v = y - 5$ then find the correlation coefficient between u and v.

e) Find the regression equation of X on Y from the following data:

X	10	12	13	17	18
Y	5	6	7	9	13

f) The blood pressure of 10 men above 50 years were 125, 130, 128, 140, 145, 155, 138, 120, 152, 160 mmHg. If the highest blood pressure man is omitted from this data, what is the percentage change in range?

3. Answer any **one** question: 10×1=10

a) i) Find the standard deviation from the following data:

49, 63, 46, 59, 65, 52, 60, 54.

ii) Find the mean and median from the following table:

Class Interval	0-5	5-10	10-15	15-20	20-25	25-30
Frequency	5	3	9	10	8	5

5+5

b) i) Find the correlation coefficient between x and y from the following data:

x	11	12	13	14	18	15
y	13	12	15	14	12	11

ii) Show that the correlation coefficient is the geometric mean of the coefficient of regression. 5+5

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