

BANKURA UNIVERSITY

Undergraduate End Semester IV Examination 2022

Subject: ECONOMICS (Honours)

Course Code: SH/ECO/401/C- 8

Course ID- 41611

Course Title- Statistical Methods for Economics-I

Full Marks: 40

Time: 2hrs.

The figures in the right margin indicate marks.

1. Answer **Any Five** of the following questions: 2 x 5 = 10
- a) Distinguish between *Attribute* and *Variable* with suitable examples.
 - b) Distinguish between *Population* and *Sample*.
 - c) Prove that the sum of deviations of $x_1, x_2, x_3, \dots, x_n$ from their mean \bar{x} is equal to zero.
 - d) Find the *Geometric Mean* of 4, 8 and 16.
 - e) Define *Mode* and find the *mode* of the data:
0, 0, 0, 1, 1, 1, 1, 2, 2, 2, 2, 4
 - f) What do you mean by *Kurtosis* of a frequency distribution?
 - g) What do you mean by *Bivariate Data*?
 - h) Show that the *correlation coefficient* is the *geometric mean of the regression coefficients*.

2. Answer **Any Four** of the following questions: 5 x 4 = 20
- a) Briefly describe various methods of collecting *Primary Data* with their relative advantages. 5
 - b) Using the following frequency distribution derive the Class Boundaries, Mid-values, Class Widths, Frequency Densities, and Relative Frequencies: 5

Marks Obtained	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 – 80	81 – 90
No. of Students	6	7	8	9	7	1	6	6

- c) What is the basic difference between *Histogram* and *Bar Diagram*? Draw a *Histogram* using the following data:

1 + 4 = 5

Signature of Moderators.....
Date.....

Daily Wages (Rs.)	5-10	10-15	15-20	20-25	25-30
No. of Workers	15	25	30	20	10

- d) Show that the *Standard Deviation (SD)* is independent of change of origin but depends on scale. 5
- e) Define *Coefficient of Variation*. The following table gives the values of mean and variance of heights and weights of the students of a class:

	Height	Weight
Mean	155cm	46.50kg
Variance	72.25cm ²	28.09kg ²

Which is more varying than the other? 1 + 4 = 5

- f) What is meant by a *Life Table*? Briefly discuss the various uses of *Life Table*. 2 + 3 = 5

3. Answer **Any One** of the following questions: 10 x 1 = 10

- a) (I) Prove that the value of the *Correlation Coefficient* between two variables x and y lies between -1 and $+1$, i. e., $-1 \leq r_{xy} \leq +1$.

(II) Find the *coefficient of correlation* from the following data:

X	3	5	7	8	9	15	16
Y	15	18	22	24	19	25	31

- b) (I) Briefly discuss various steps and the associated problems in the construction of Price Index Numbers.

(II) From the following data construct the *price index number* for 1988 with 1985 as base using Laspeyres' and Paasche's formula. Also calculate Fisher's Ideal Index:

Commodity	Price		Quantity	
	1985	1988	1985	1988
A	20	25	10	12
B	18	32	16	10
C	35	48	8	8
D	28	40	12	10

Signature of Moderators.....
Date.....