U.G. 2nd Semester Examinations 2022

ECONOMICS (Honours)

Paper Code : ECOH DC-4 (Core-4)

(Statistical Methods for Economics)

Full Marks : 32 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Group - A

Answer any *four* questions. 2×4=8

1. What is Kurtosis?
2. If all the observations are increased by the same amount, what will be the effect on standard deviation?
3. What is Mean Absolute Deviation?
4. What is scatter diagram?
5. State the relationship between Correlation Coefficient and Regression Coefficients.
6. If the first quartile is 142 and the semi-interquartile range is 18, what is the third quartile?

Group - B

Answer any *four* questions. 4×4=16

7. If x and y are independent then, prove that they are uncorrelated.
8. Calculate the standard deviation from the following series :

   20, 85, 120, 60, 40.

9. The G.M. of 4 observations is 47, and the G.M. of 6 others is 40. Find the G.M. of all the 10 observations.

   Let A, G and H represent AM, GM and HM of two observations. Prove that $G^2 = AH$.

10. The arithmetic mean of a certain distribution is 5. The second and the thrid moments about the mean are 20 and 140 respectively. Find the third moment of the distribution about 10.
11. Prove that the correlation coefficient r lies between –1 and +1.

P.T.O.

12. Find the regression of x on y from the following data :

$\Sigma x = 24$ $\Sigma y = 44$ $\Sigma xy = 306$
$\Sigma x^2 = 164$ $\Sigma y^2 = 574$ $n = 4$

Find the essential value of x, when $y = 6$.

13. Distinguish between multiple correlation and partial correlation.

14. Using 3-year moving averages, determine the trend and short term fluctuations of the following data :

Year :	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Production : ('000 tons)	21	22	23	25	24	22	25	26	27	26

Group - C

Answer any *one* question. 8×1=8

15. Using Paasche's formula, compute the quantity index and the price index numbers for 1970 with 1966 as base year :

Commodity	Quantity	Units	Value	Rs.
	1966	1970	1966	1970
A	100	150	500	900
B	80	100	320	500
C	60	72	150	360
D	30	33	360	297

16. Two samples of sizes 60 and 90 have 52 and 48 as the respective arithmetic means and 9 and 12 as the respective standard deviations. Find the Arithmetic mean and the standard deviation of the combined sample of size 150.

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