

U.G. 4th Semester Examination 2022

ECONOMICS (Honours)

Paper Code : ECOH - DC-10

(Introductory Econometrics)

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* of the following questions.

2×4=8

1. What is regression?
2. What do you mean by the term “heteroscedasticity”?
3. In the regression function $y = \alpha + \beta x + c$, which are the regressor and regressand?
4. State the formula for the coefficient of determination.
5. In the case of multicollinearity which test will be significant?
6. Define quantitative and qualitative data.

Group - B

Answer any *four* of the following questions.

4×4=16

7. Briefly explain a test to check pressure of heteroscedasticity.
8. For the simple regression without a constant $Y_i = \beta X_i + u_i$, derive the OLS estimator of β .
9. Show that in a single variable regression, $y = \alpha + \beta_r$, OLS estimator $\hat{\beta}$ is the unbiased estimator of population parameter β .

[P.T.O.]

10. State the assumptions of the classical linear regression (OLS) model in mathematical form.
11. Discuss the use of dummy variable in a regression model.
12. Define error term and explain its uses in econometric analysis.
13. Calculate the parameters of the simple linear regression using the following information

$$n = 7, \quad \sum_{i=1}^n x_i = 113$$

$$\sum_{i=1}^n x_i^2 = 1983$$

$$\sum_{i=1}^n y_i = 182 \quad \text{and}$$

$$\sum x_i y_i = 3186$$

14. State the basic properties of the OLS estimators of a simple regression model.

Group - C

Answer any *one* of the following questions.

8×1=8

15. Define autocorrelation. Explain the steps involved in Durbin-Watson test to detect the problem of autocorrelation. 2+6
16. (a) Discuss when a regression model is good to fit.
(b) In a regression model

$$Y = \alpha + \beta X + u$$

How do you test the importance of independent variable X .

3+5
