

# Gurudas College

Internal Examination - 2020

Economics Honours

Paper: CC-4-10

Econometrics

## Group A (IA)

**Time: 2 hrs**

**Answer Any Five questions**

Write True or False

- i) A bivariate regression analysis is one with two X variables
- ii) Linear regression models are linear in Parameter
- iii) The sum of the residuals is always zero
- iv) The regression line minimizes the sum of the squared residuals
- v) Total Sum of Squares = Explained Sum of Squares + Residual Sum of Squares
- vi) GDP data of Indian Economy is an example of cross section data
- vii) A Multivariate regression analysis is one with many X variables.

## Group B (Theory)

**Answer any two questions**

1) For the population of chief executive officers, the estimated salary and average return on equity is given as follows

$$\widehat{salary} = 963.191 + 18.501roeq(\text{rate of return on equity})$$

moreover,  $n=209$  and  $R^2 = 0.0132$

How do we interpret the equation? What does  $R^2$  signify? Can we comment on the relationship between salary and rate of return based on the value of  $R^2$

2) What are the limitations of simple regression model? What can be done to overcome the limitations? Illustrate with an example

3) Suppose we have the estimated equation

$$\widehat{Wage} = -0.90 + 0.54 \text{ education.}$$

How do we interpret the equation?

4) Hypothetical data on Weekly family consumption expenditure Y and Weekly Family income X are given in the table below.

Y	X
70	80
65	100
90	120
95	140
110	160
115	180
120	200
140	220
155	240
150	260

Write down the regression model and estimate the parameters. What would be the estimated regression line?