

00281

RESEARCH DEGREE PROGRAMME IN ECONOMICS

Term-End Examination

December, 2016

REC-003 : ECONOMETRIC METHODS

Time : 3 hours

Maximum Marks : 100

Note : Answer questions from each section as directed.

SECTION - A

Answer any two questions from this section. 2x20=40

1. Consider the multiple regression model $Y = X\beta + u$. Standard matrix notations apply. Derive OLS estimator for β . Prove that $\hat{\beta}$ is Best Linear Unbiased Estimator (BLUE).
2. What is meant by stationarity in a time series ? What are the implications of non-stationarity ? How do you test for stationarity in a time series ?
3. Consider the following two-equation system :

$$Y_1 = \alpha_1 + \alpha_2 Y_2 + \alpha_3 Z_1 + u_1$$

$$Y_2 = \beta_1 + \beta_2 Y_1 + \beta_3 Z_2 + \beta_4 Z_3 + u_2$$
 - (a) Explain the identification condition of both the equations.
 - (b) Explain how the first equation can be estimated.

4. Explain the underlying idea behind the linear probability model. What are its limitations ? Explain how logit model takes care of these limitations.

SECTION - B

Answer any five questions from this section. $5 \times 12 = 60$

5. What are the consequences if a data set has autocorrelation problem ? Explain a method of testing for it.
6. Consider the production function $Y = AK^\alpha L^\beta e^u$. Derive OLS estimator for the parameters and interpret the model.
7. What is the difference between R^2 and adjusted - R^2 ? Interpret both the terms.
8. Explain the Granger causality test procedure for investigating whether x_t causes y_t .
9. While estimating a regression model you found that the dependent variable is measured with certain error. Specify the model. What are its consequences on the parameters ?
10. Explain the concept of multicollinearity. What are its consequences ? What are the measures taken to reduce the problem ?
11. Distinguish between fixed effects and random effects models in a panel data. Outline steps to estimate fixed effects model.
12. Write short notes on the following :
(a) Error Correction Model
(b) ARIMA Models