

00575

## RESEARCH DEGREE PROGRAMME IN ECONOMICS

### Term-End Examination

June, 2019

#### REC-103 : ECONOMETRIC METHODS

*Time : 3 hours*

*Maximum Marks : 100*

*Note : Answer questions from each section as directed.*

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#### SECTION - A

Answer any two questions from this section :       $2 \times 20 = 40$

1. Consider a two - equation model with  

$$Y_1 = a_1 + a_2y_2 + u_1$$

$$Y_2 = b_1 + b_2y_1 + b_3z_1 + b_4z_4 + u_2$$
 (a) Obtain identification condition of the first equation.  
 (b) Estimate the first equation through instrumental variable method.
2. What do you understand by heteroscedasticity ? What are the consequences of using OLS method in the presence of heteroscedasticity ? Explain the Breusch-Pagan-Godfrey test to detect it.
3. Explain the underlying ideas behind the probit model. Explain how probit model can be estimated.
4. Consider a panel data model. Point out the assumptions that are made in fixed effects and random effects models. How do you decide on the choice between the models ?

## **SECTION - B**

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

5. Explain the concept of BLUE. Prove that the OLS estimates are BLUE.
6. When do you encounter the problem of multi-collinearity in data ? What are the remedial measures for the problem of multi-collinearity ?
7. Define the partial adjustment model. In what respects is it different from dynamic models ?
8. Explain the structure of an AR model and an MA model. Explain how both the models are related.
9. Specify the random walk models. What are its applications ?
10. Explain the concept of  $R^2$  through an appropriate diagram. What are the interpretations of  $R^2$ . Why do you need adjusted -  $R^2$  ?
11. Explain the concept of unit root. How do you list for the presence of unit root in a data set ?
12. Write short notes on **any two** of the following :
  - (a) Co-integration
  - (b) Dummy variable trap
  - (c) Chav test for structural break

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