

**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.

SECTION - A

Answer any two questions from this section : **2x20=40**

1. Consider a two - equation model with
$$Y_1 = a_1 + a_2 y_2 + u_1$$
$$Y_2 = b_1 + b_2 y_1 + b_3 z_1 + b_4 z_4 + u_2$$
 - (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. 5x12=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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