**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

Register Number:

DATE:

**M.A. ECONOMICS – IV SEMESTER**

**SEMESTER EXAMINATION: APRIL 2018**

**EC0116: ADVANCED ECONOMETRICS**

Time-2 ½ hrs Max Marks-70

**This paper contains TWO printed pages and THREE parts**

 **PART A**

**Answer any TEN of the following 2 X10 = 20**

1. Differentiate between distributed lag model and autoregressive model.
2. What is simultaneous equation bias?
3. Explain the difference between structural form equations and reduced form equations with examples.
4. State the rank condition for identification of an equation in a simultaneous equation model.
5. What are instrumental variables? Provide an example.
6. Define a stationary series. Give an example of a stationary series.
7. Write the equation of a random walk model.
8. Differentiate between trend stationary and difference stationary.
9. State the advantages of panel data models over cross sectional data models.
10. What is log likelihood function in maximum likelihood estimation?
11. Give an example where one can apply logit or probit regression.
12. Differentiate between a censored regression and a truncated regression.

**PART B**

**Answer any TWO of the following 10x 2 = 20**

1. Check for rank and order condition for each one of the following equations.

 Y1t = β10 + β12Y2t + β13Y3t + γ11 X1t + u1t ------(1)

 Y2t = β20 +β23Y3t + γ21 X1t + γ22 X2t + u2t ------ (2)

 Y3t = β30 + β31Y1t +γ31 X1t + γ32 X2t + u3t ------ (3)

 Y4t = β40 + β41Y1t + β42Y2t +γ43 X3t + u4t ------ (4)

1. Prove that random walk model, random walk model with drift and a model with a trend are non-stationary time series models.
2. Write a note on cointegration and error correction model.

 **PART C**

**Answer any TWO of the following** **15 X 2 = 30**

1. Explain the graphical and non-graphical ways of deciding non-stationary models and the order of AR and MA.
2. How will you test presence of endogeneity? Explain the 2SLS and 3SLS model of estimation.
3. Explain the Koyck model. Also discuss how Almon’s distributed lag model is better than Koyck model.