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

**M.A ECONOMICS – IV SEMESTER**

**SEMESTER EXAMINATION – APRIL 2017**

**EC 0116 – Advanced Econometrics**

**Time: 2 hr 30 min. Maximum marks: 70**

**This question paper has ONE printed pages and THREE parts**

**Part A. Answer any TEN of the following: 2x10=20**

1. State two reasons for considering lags in econometric modelling.
2. Define autoregressive and distributed lag model.
3. State the long run multiplier in the context of distributed lag model.
4. Write down two drawbacks of ad hoc estimation of distributed-lag models.
5. What is the difference between pre-determined variable and exogenous variable?
6. State the order condition for identification of an equation in a simultaneous equation system.
7. State the Granger causality test.
8. What is the interpretation of log-likelihood ratio in logit model?
9. Distinguish between trend stationary process and difference stationary process.
10. Define spurious regression.
11. What is the rationale of error correction model?
12. Show the relationship between Durbin-Watson d static and autocorrelation function.

**Part B: Answer any TWO of the following: 10x2=20**

1. State the identification problem. If you are given a time series data set on wage rate and stock of labour for a market, do you think that you are able to identify the labour demand and labour supply function for estimation? Give your reason using suitable example.
2. Describe the Koyck transformation of distributed-lag model.
3. Explain the Box-Jenkins methodology for forecasting.

**Part C: Answer any TWO of the following: 15X2=30**

1. Explain the Logit model using suitable example.
2. Describe the two-stage least square (2-SLS) and three stage least square (3SLS) methods of estimation.
3. From the model

$$Y\_{1t}= β\_{10}+β\_{12}Y\_{2t}+γ\_{11}X\_{1t}+u\_{1t}$$

$$Y\_{2t}= β\_{20}+β\_{21}Y\_{1t}+γ\_{22}X\_{2t}+u\_{2t}$$

the following reduced-form equations are obtained:

$$Y\_{1t}= π\_{10}+π\_{11}X\_{1t}+π\_{12}X\_{2t}+w\_{t}$$

$$Y\_{2t}= π\_{20}+π\_{21}X\_{1t}+π\_{22}X\_{2t}+v\_{t}$$

(a) Are the structural equations identified?

(b) What happens to identification if it is known a priori that $γ\_{11}$ = 0? Explain.

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