

2017
ECONOMICS
Paper : 4.6

ECONOMETRICS

Full Marks: 80

Time: 3 hours

The figures in the margin indicate full marks for the questions

1. **Answer the following questions :** **2x4=8**
 - a. Under what condition should we use IV method in place of OLS?
 - b. Why do we need a simultaneous difference equation model to generate a simulation?
 - c. How do we remove the unit root problem?
 - d. What are the extreme d-statistic values for autocorrelated disturbance term?
2. **Answer the following questions :** **5x4=20**
 - a. What are the properties of 2SLS?
 - b. Explain the differences between single equation model and simultaneous equation model.
 - c. Explain Co-Integration shortly.
 - d. Explain spurious regression shortly using some variables.
3. **Answer any two (2) of the following questions :** **10x2=20**
 - a. Analyze the effect of OLS in lag model when there is autocorrelation problem.

- b. Under what condition do we use ILS method. Derive the ILS estimators of the coefficient of the equation of SEM.
- c. Prove that the variance of the estimators under Heteroscedasticity is larger than its variance under standard OLS assumptions.
- d. Elaborate the Durbin-Watson Test statistic for detection of autocorrelation.

4. Answer the following questions : 16x2=32

- a. What is error correction model? Also discuss the various problems of linear probability model (LPM). 6+10=16

OR

What do you mean by dummy dependent variable. How would you estimate grouped data and individual data in logit model? 4+12=16

- b. What are the properties exhibited by a stationary time series. Check the stationarity for a ARMA model. 2+14=16

OR

Elaborate non stationary time series with its types. Check the stationarity for a RWM with drift and RWM without drift. If not stationary convert them into a stationary series.

4 + 12 = 16
