

33. Explain VAR models. Bring out the merits and limitations of the model.  
(7 × 2 = 14 Weightage)

**Part D** (Essay questions)

Answer any *two* questions. Each question carries 4 weightage.

34. Explain the fixed effect versus random effect models in panel data analysis  
35. Explain the different single equation methods of estimation of simultaneous equations.  
36. Explain non-stationarity in time series analysis and its relation with the random walk models?  
37. Examine the Box–Jenkins methodology of economic forecasting.

(2 × 4 = 8 Weightage)

\*\*\*\*\*

**21P429**

(Pages: 4)

Name: .....

Reg. No: .....

**FOURTH SEMESTER M.A. DEGREE EXAMINATION, APRIL 2023**

(CBCSS - PG)

(Regular/Supplementary/Improvement)

**CC19P ECO4 E01 - ADVANCED ECONOMETRICS**

(Economics)

(2019 Admission onwards)

Time: 3 Hours

Maximum: 30 Weightage

**Part A**

Answer *all* questions. Each question carries 1/5 weightage.

- In an LPM, the errors are
  - homoscedastic
  - heteroscedastic
  - normally distributed
  - all equal to zero
- In logit model, the log of the odds ratio is
  - linear in X and linear in parameters
  - linear in X and nonlinear in parameters
  - nonlinear in X and nonlinear in parameters
  - nonlinear in X and linear in parameters
- Profits of a firm depend on the current sales and past period (t-1) sales of the firm. This is an example of
  - Autoregressive model
  - Distributed lag model
  - Lagged model
  - Linear probability model
- The large-sample test of first-order serial correlation in autoregressive model proposed by Durbin is
  - Durbin-Watson h test
  - Durbin-Watson h test
  - Durbin t test
  - Durbin F test
- What is an instrumental variable?
  - A variable that is endogenous to the model
  - A variable that is correlated with the outcome variable
  - A variable that is correlated with the endogenous variable and uncorrelated with the error term
  - A variable that is exogenous to the model

6. What is the Almon approach to distributed lag models?
- (a) A method for estimating a single lag coefficient in a time series model  
 (b) A method for estimating multiple lag coefficients in a time series model  
 (c) A method for estimating a lag coefficient based on a polynomial function of lags  
 (d) A method for estimating a lag coefficient based on a linear function of lags
7. In simultaneous equation model, the number of equations to be estimated is
- (a) One more than the number of endogenous variables  
 (b) Equal to the number of endogenous variables  
 (c) Depend on the underlying economic theory  
 (d) Equal to the number of endogenous and exogenous variables
8. For a SEM with  $k$  unknowns and  $k$  reduced form equations, the model is said to be
- (a) Exactly identified (b) Over identified  
 (c) Under identified (d) Unidentified
9. In SEMs, OLS can be applied if
- (a) it is a recursive model  
 (b) order condition is satisfied  
 (c) rank condition is satisfied  
 (d) both order and rank conditions are satisfied
10. In random walk without drift
- (a) The effect of shock persists throughout the time period  
 (b) The effect of shock in the past dies out over time  
 (c) The effect of shock drifts away quickly  
 (d) There is no effect of past shock
11. In regression model, the explanatory variables are found to be correlated with the error term. OLS estimation of this regression model would result in the parameters being
- (a) Biased (b) Inconsistent  
 (c) Biased and inconsistent (d) Unbiased but inconsistent
12. A stochastic process whose mean, variance and autocovariance are constant over time is known as
- (a) Trend stationary (b) Difference stationary  
 (c) Weakly stationary (d) Strictly stationary
13. An approach to forecasting using time series data is
- (a) Single equation regression model (b) Simultaneous equation regression model  
 (c) Vector autoregression (d) All of the above

(2)

14. Under Box- Jenkins method, which of the following tools is used for identification of a model?
- (a) Autocorrelation function (b) Partial autocorrelation function  
 (c) Correlograms (d) All the above
15. Partial autocorrelation measures correlation between observations that are
- (a)  $k$  time periods apart (b)  $k+1$  time series apart  
 (c)  $2k$  time series apart (d)  $2k+1$  time series apart

(15 × 1/5 = 3 Weightage)

**Part B** (Very Short Answer Questions)Answer any *five* questions. Each question carries 1 weightage.

16. Define censored regression model.  
 17. Define a finite lag model.  
 18. Why OLS cannot be applied to estimate autoregressive models?  
 19. Define simultaneous-equation models.  
 20. What is a reduced form equation?  
 21. Define spurious regression  
 22. What is the meaning of cointegration?  
 23. Define ARCH model

(5 × 1 = 5 Weightage)

**Part C** (Short Answer Questions)Answer any *seven* questions. Each question carries 2 weightage.

24. Explain the linear probability model  
 25. Explain autoregressive and distributed lag models.  
 26. Explain the reasons for lags in economic studies.  
 27. Bring out the features of  $h$  statistic.  
 28. Explain the case of simultaneous equation models in which OLS can be applied for the estimation of the models.  
 29. Explain the method of indirect least squares in the estimation of exactly identified structural equations.  
 30. Explain the general IV model of estimation.  
 31. Explain the procedure for checking the instrument validity in the IV estimation.  
 32. What are Dickey-Fuller and augmented Dickey-Fuller tests?

(3)

**Turn Over**