



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.A. DEGREE EXAMINATION – ECONOMICS**

**SECOND SEMESTER – APRIL 2016**

**EC 2811 - ECONOMETRICS**

Date: 22-04-2016  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**PART-A**

**Answer any FIVE Questions :-**

**(5x4=20marks)**

1. Define Econometrics.
2. What is Dummy Variable Trap?
3. State the concept of 'Goodness of Fit' using a suitable diagram.
4. State the properties of a good estimator.
5. Differentiate Auto regressive models from Distributed Lag models.
6. Write the procedure of park test used for detecting Heteroscedasticity.
7. State the order and rank conditions for identification.

**PART –B**

**Answer any FOUR Questions :-**

**(4X10=40marks)**

8. Briefly explain the methodology of econometrics.
9. Discuss the nonlinear transformations.
10. In a General Linear Model  $Y = X\beta + U$ , show that  $\hat{\beta} = (X'X)^{-1}X'Y$ .
11. Examine the Durbin-Watson test used for detecting Auto correlation.
12. Explain the Piece-wise regression using dummy variable technique.
13. State the procedure for testing the overall significance of multiple regression coefficients in a 'K' variable model.
14. The following table includes the Price and Quantity demanded for toffees:

Quantity (in thousands):	8	3	4	7	8	0
Price (Rs.):	2	4	3	1	3	5

  - a) Estimate the demand function for toffees  $Y = \beta_1 + \beta_2 X_i + U_i$ .
  - b) Calculate the price elasticity of demand.
  - c) Forecast the level of demand if price rises to Rs.8.

**PART-C**

**Answer any TWO Question:-**

**(2X20=40marks)**

15. Using Gauss-Markov theorem, show that the OLS estimator is BLUE.
16. Discuss the consequences of Multicollinearity and show that precision of an estimator falls when there is multicollinearity.
17. Derive the Three Stage Least Squares.
18. Discuss the identifiability state of the following model using both structural and reduced forms:
$$y_1 = 4y_2 - 3x_1 + u_1.$$
$$y_2 = 2y_3 + 2x_3 + u_2.$$
$$y_3 = 2y_1 - 3y_2 - x_2 - x_3 + u_3.$$

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