M.A. Examination, 2018
Semester-I
Economics
Course –II (Core)
(Econometrics)

(For Back Candidates)

Time: Three Hours **Full Marks: 40**

Questions are of value as indicated in the margin

Answer ***any four*** questions

1. (a) State the assumptions of the Classical Linear Regression Model (CLRM), mentioning clearly the meanings of all the symbols. 5

   (b) Derive the OLSE of the vector of the β-parameters in the above Model. 5

2. In the context of the CLRM, state and prove the Gauss-Markov theorem. 2+8

3. In the context of the CLRM,

   (a) Show that Total Sum of Squares is equal to the sum of Explained Sum of Squares and Residual Sum of Squares. 5

   (b) Obtain the relation between the explained variable and the explanatory variables when R^2 equals to 1. 5

4. Explain utilities of regression analysis, with suitable examples. 10

5. (a) What is meant by heteroscedasticity? 2

   (b) Describe Weighted Least Squares Method in the context of heteroscedasticity. 5

   (c) In the context of heteroscedasticity, when the disturbance variances are unknown explain an Ad-hoc example for finding BLUE of the regression coefficients. 3

6. (a) What is autocorrelation? 2

   (b) Describe the consequences of autocorrelation by a suitable illustration. 8

7. (a) Define dummy variable and explain its usefulness. 6

   (b) Describe dummy variable trap. 4

8. Write short notes on ***any two*** of the followings: 5+5

   (a) Consequences of heteroscedasticity.

   (b) Durbin-Watson Test.

   (c) Consequences of multicollinearity.

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