M.A. Examination, 2018
Semester-III
Economics
Course – XI (Group-A) (Special Paper)
(Econometrics-I)

(For Back Candidates)

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

Questions are of value as indicated in the margin

Answer Question Number 1, 2, or 3, 4 or 5

1. Examine whether the following statements are True (T), False (F) or uncertain (U) (Provide a brief explanation) (***any four***) 4×4=16
   (a) It is appropriate to represent a trichotomous situation by using one dummy variable with three different values.
   (b) The conventionally computed R^2 is of limited value in case of qualitative response regression model.
   (c) The OLS method is not applicable for estimation of the structural form equation of a simultaneous equation system.
   (d) For an exactly identified equation 2SLS estimates coincide with ILS estimates.
   (e) The problem of simultaneity does not arise in a recursive simultaneous equation model.
   (f) OLS method may not be directly applicable for estimation of an autoregressive model.
2. (a) Specify a Probit Model and state the procedure to estimate such a model.
   (b) How are the marginal effects computed in a Probit Model? 9+3=12
3. (a) Distinguish between a distributed lag model and an autoregressive model.
   (b) Describe Almon's polynomial lag model.
   (c) Discuss the practical problems associated with the Almon technique. 2+7+3=12
4. Consider the following model:

   $y_{1t} = \beta_{12}y_{2t} + \gamma_{11}x_{1t} + u_{1t}$

   $y_{2t} = \beta_{21}y_{1t} + \gamma_{22}x_{2t} + \gamma_{23}x_{3t} + u_{2t}$

   The sample matrices are:

   $$X'X = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 20 & 0 \\ 0 & 0 & 10 \end{bmatrix} \qquad X'Y = \begin{bmatrix} 5 & 10 \\ 40 & 20 \\ 20 & 30 \end{bmatrix}$$

   (a) Examine the identification status of each equation.
   (b) Estimate the parameters of the second equation by appropriate estimation method. 3+3+6=12
5. Derive the order and rank condition for identification of an equation in a simultaneous equation system. 12

———