2014

M.A/M.Sc.

3rd Semester Examination

ECONOMICS

PAPER—ECO-301E

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Special Paper : Econometrics

Group—A

1. Answer any *two* of the questions : 2×2

(a) What will be the effect if the relation $y = \alpha + \beta x + \gamma x^2$ is misspecified as $Y = A + Bx$?

(b) What are the implications of the assumption that the disturbance term has zero mean ?

(c) When would you use $\bar{R}^2$ i.e., adjusted R^2, instead of R^2 as a measure of goodness of fit ?

(d) Why does sign of the estimated coefficient of an explanatory variable change in the multiple regression model from the simple regression model ?

2. Answer any *one* question : 1×6

(a) Give two alternative interpretations of a multiple regression coefficient. What are their significances ? 4+2

(b) What do you mean by relative importance of an explanatory variable ? How can it be measured ? 3+3

3. Answer any *one* question : 1×10

(a) What do you mean by multicollinearity ? Distinguish between multicollinearity with enhancement synergism and that without enhancement synergism. What are the effects of perfect multicollinearity ? 2+4+4

(b) What do you mean by the assumption that the explanatory variables in the regression model are non-stochastic ? What are the justification and implication of this assumption ? 4+(3+3)

Group—B

4. Answer any *two* questions : 2×2

(a) What are the different assumptions of a K variable classical linear regression model.

(b) Write about any two desirable large sample properties.

(c) What is dummy variable trap?

(d) What are the different uses of dummy variables?

5. Answer any *one* question : 1×6

(a) Show that the maximum likelihood estimator $\tilde{\sigma}^2$ is a biased estimator of σ^2, the variance of the error term, in case of a K variable classical linear regression model.

(b) Explain, with the help of an example< how dummy variables can be used to capture seasonal effects.

6. Answer any *one* question : 1×10

(a) Derive the maximum likelihood estimator of β for a K-variable linear model. Also find out its mean and variance.

6+2+2

(b) Explain with the help of a suitable example, how you would detect a one time exogenous structural break in a series.