Total No. of Printed Pages—7

4 SEM TDC ECOH (CBCS) C 10

2022

(June/July)

ECONOMICS

(Core)

Paper : C–10

(Introductory Econometrics)

Full Marks : 80

Pass Marks : 32

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer the following as directed : 1×8=8

(a) Who first coined the term 'econometrics' among the following?

(i) Adam Smith

(ii) Ragnar Frisch

(iii) John Maynard Keynes

(iv) None of them

(Choose the correct answer)

(b) In econometrics, BLUE stands for

(i) Best Linear Unobserved Estimators

(ii) Best Linear Unbiased Estimate

(iii) Best Linear Unbiased Estimator

(iv) Both (ii) and (iii)

(Choose the correct answer)

(c) The term 'u' in an econometric model is usually referred to as

(i) the stochastic error term

(ii) the independent variable

(iii) the dependent variable

(iv) None of the above

(Choose the correct answer)

(d) $\overline{R}^2$ is never greater than R^2. (R^2 = the coefficient of determination and $\overline{R}^2$ = adjusted coefficient of determination)

(Write True or False)

(e) In case of multicollinearity, several or all explanatory variables of a regression model are

(i) not correlated

(ii) not perfectly correlated

(iii) correlated or highly correlated

(iv) Both (i) and (ii)

(v) None of the above

(Choose the correct answer)

(f) Autocorrelation is a relationship between

(i) two or more different variables

(ii) the successive values of the same variables

(iii) dependent and independent variables

(iv) Both (i) and (ii)

(Choose the correct answer)

(g) "The test result says you have COVID–19, but you actually don't." This is an example of

(i) Type I error

(ii) Type II error

(iii) Both (i) and (ii)

(iv) None of the above

(Choose the correct answer)

(h) Define panel data.

2. Write short notes on any *four* of the following (within *150* words each) : 4×4=16

(a) The coefficient of determination (R^2)

(b) Point estimation vs. Interval estimation

(c) The normal distribution

(d) Dummy variable

(e) Cross-section data vs. Time series data

Answer the following questions :

3. (a) What is econometrics? Distinguish between economic and econometric models. Discuss the nature and scope of econometrics. 2+2+8=12

Or

(b) What do you mean by estimator? Discuss the properties of a good estimator for both small sample and large sample. 2+5+5=12

4. (a) Define Gauss-Markov theorem. Prove that OLS is BLUE under the assumptions of the classical linear regression model. 3+8=11

Or

(b) What is adjusted coefficient of determination ($\bar{R}^2$)? Explain the assumptions of classical linear regression model briefly. 3+8=11

5. (a) What is multicollinearity? What are the reasons for arising multicollinearity? Discuss two methods to detect multicollinearity. 2+3+6=11

Or

(b) "Multicollinearity : Much ado about nothing?" Discuss the statement. Discuss the remedial measures to solve the problem of multicollinearity. 4+7=11

6. *(a)* What do you mean by heteroscedasticity? Explain the main reasons of heteroscedasticity problem. Define one method to detect/test heteroscedasticity problem. 2+6+3=11

Or

(b) Discuss the main reasons of autocorrelation. Define the Durbin-Watson Test for autocorrelation. 7+4=11

7. *(a)* What is specification error? What are the causes of specification error? Discuss the main types of specification errors. 3+5+3=11

Or

(b) Discuss the consequence of omitting relevant variables and inclusion of irrelevant variables in a regression model. 5+6=11

★ ★ ★