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4 SEM TDC ECOH (CBCS) C 10

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(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) \bar{R}^2 is never greater than R^2 . (R^2 = the coefficient of determination and \bar{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)

(4)

(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) : $4 \times 4 = 16$

(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

(5)

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. $2+3+6=11$

(6)

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

(7)

Or

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