Total No. of Printed Pages-7

4 SEM TDC ECOH (CBCS) C 10

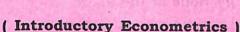
2024

(May/June)

ECONOMICS

(Core)

Paper: C-10



Full Marks: 80 Pass Marks: 32

Time: 3 hours

The figures in the margin indicate full marks for the questions

1. Choose the correct answer: 1×8=8

- (a) The probability of Type I error is
 - (i) degree of freedom
 - (ii) standard error
 - (iii) level of significance
 - (iv) None of the above

- (b) The term 'Regression' was introduced by
 - (i) Ragnar Frisch
 - (ii) Sir Francis Galton
 - (iii) Karl Pearson
 - (iv) Both (i) and (ii)
 - (v) None of the above
- (c) E(uu) = ?
 - (i) $\sigma_u^2 I$
 - (ii) $\sigma_u^2 A'$
 - (iii) I
 - (iv) None of the above
- (d) Dummy variable can
 - (i) take any value between 0-100
 - (ii) take any value between 10-100
 - (iii) only take value 0 and 1
 - (iv) only take positive values

- (e) Multicollinearity is essentially a
 - (i) sample phenomenon
 - (ii) population phenomenon
 - (iii) Either (i) or (ii)
 - (iv) Both (i) and (ii)
 - (v) None of the above
- (f) In case of multicollinearity problem
 - (i) R^2 is high but few t-test ratios are significant
 - (ii) R^2 is low but t-test ratios are significant
 - (iii) R² is high with high t-test ratio
 - (iv) R2 is low with low t-test ratio
 - (v) None of the above
- (g) The coefficient of determination value lies between
 - (i) -1 and +1
 - (ii) -1 and 0
 - (iii) 0 and +1
 - (iv) None of the above

ANOVA model consists of

- (i) quantitative explanatory variables
- (ii) qualitative explanatory variables
- (iii) both quantitative and qualitative explanatory variables
- (iv) None of the above
- 2. Write short notes on any four of the following (within 150 words each): 4×4=16
 - (a) Type I and Type II errors
 - (b) R-bar square (\overline{R}^2)
 - (c) Perfect multicollinearity v/s imperfect multicollinearity
 - (d) Errors in variable
 - (e) The stochastic error term
- 3. (a) What do you mean by econometrics?

 Distinguish between mathematical economics and econometrics. Explain the nature and scope of econometrics.

2+4+6=12

Or

- (b) What is null and positive hypothesis?

 What are the steps involved in hypothesis testing? Discuss with the help of an example.

 4+8=12
- 4. (a) "Under the assumptions of the classical linear regression model, the OLS is BLUE." Prove the statement.

 What is the difference between the stochastic error term and the residual u_i ? 7+4=11

Or

- (b) What is Gauss-Markov theorem?

 Discuss the main assumptions of the
 OLS. 3+8=11
- 5. (a) Analyse the main consequences of heteroscedasticity. Discuss the remedial measures to remove the problem of heteroscedasticity. 5+6=11

24P/1301

Or

Define different methods to detect the problem of heteroscedasticity.

6. (a) What do you mean by autocorrelation? Explain the Durbin-Watson test to detect the problem of autocorrelation. Mention few limitations of the Durbin-Watson test. 3+6+2=11

Or

- (b) Discuss the main effects of the autocorrelation problem. How do you remove/solve the problem of autocorrelation? Suggest some measures of the problem. 5+6=11
- Define specification error. Discuss the main types of specification errors. What are the methods to solve the problem of specification error?

2+4+5=11

(Continued)

Or

What do you mean by errors in variables? Discuss the various tests to detect the problem of specification error. Write two main consequences of 2+5+4=11 omitting relevant variables.

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