

D 101426

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Name.....

Reg. No.....

FOURTH SEMESTER P.G. (CCSS) DEGREE EXAMINATION, APRIL 2024

Economics

ECO4E09—APPLIED ECONOMETRICS

(2022 Admissions)

Time : Three Hours

Maximum : 50 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

- Given the logit model, $L_i = \log_e \left(\frac{P_i}{1-P_i} \right)$ where $\left(\frac{P_i}{1-P_i} \right)$ is the odd ratio, what should be the range of L_i when $0 \leq P_i \leq 1$?
 - $0 \leq L_i \leq 1$.
 - $-1 \leq L_i \leq 0$.
 - $L_i \leq \infty$.
 - $-\infty \leq L_i \leq \infty$.
- In the Koyck model $\beta_k = \beta_0 \lambda^k$ which of the following is true regarding the numerical sign of the coefficient, β ?
 - β 's differ in sign.
 - β 's have same sign.
 - β 's cannot be zero.
 - β 's change from +ve to -ve sign.
- A large sample test of first -order serial correlation in autoregressive models is the :
 - Durbin h test.
 - Durbin Watson d test.
 - Likelihood ratio test.
 - Quandt test.
- A formal test for deciding the lag length in VAR model is :
 - Akaike Information criterion.
 - Schwarz criterion.
 - Hanna-Quinn criterion.
 - All of (a), (b) and (c).

Turn over

5. Which of the following is appropriate modelling when the error variance in a time series follows an AR model ?

- (a) GARCH model.
- (b) ARMA model.
- (c) ARCH model.
- (d) ARIMA model.

(5 × 1 = 5 marks)

Part B

*Answer any **five** questions.
Answer in one or two sentences each.
Each question carries 1 mark.*

- 6. What do you mean by Granger causality ?
- 7. What is ARCH model ?
- 8. What are the features of the Durbin h -statistic ?
- 9. What do you mean by “break” ? Discuss the methods of testing for breaks.
- 10. What is Correlogram ? Explain.
- 11. Distinguished between fixed effects and random effects regression model.
- 12. Compare and comment on the Logit and Probit models.
- 13. Distinguish between ARMA and ARIMA models.

(5 × 1 = 5 marks)

Part C

*Short Answer questions.
Answer any **six** questions.
Each question carries 4 marks.*

- 14. Examine the limitations of panel data.
- 15. What are the methods for checking for autocorrelation ? Explain.
- 16. Examine the relevance of Ljung-Box (LB) Statistic.
- 17. What is adaptive expectation ? Explain the adaptive expectation model as rationalisation of Koyck model.
- 18. What is trend ? Explain the random walk model of stochastic trend.
- 19. State the assumptions of distributed lag models.

20. What is ECM ? How is error correction model related to cointegration ? Explain.
21. What do you mean by polynomial distributed lag model ? Explain.
22. What is causality in economics ? Explain the concept of Granger causality.
23. Examine the alternative criteria for deciding lag length in a regression model ?

(6 × 4 = 24 marks)

Part D

Essay type questions.

*Answer any **two** questions.*

Each question carries 8 marks.

24. Elucidate the major steps involved in applying the Box-Jenkins methodology for dealing with time series models.
25. Discuss the Polynomial distributed lag model. Is it an improvement over Koyck model ? Why ?
26. "A test for cointegration can be thought of as a pre-test to avoid spurious regression situations" Expound the alternative tests for cointegration.
27. Write notes on the following :
 - (i) 'trend' and 'break'.
 - (ii) deterministic trend and stochastic trend.
 - (iii) Phillip-Perron Test.
 - (iv) Critics of the unit root test.

(2 × 8 = 16 marks)