(6 pages)

S.No. 8108 **P 22 ECE 3 A**

(For candidates admitted from 2022–2023 onwards)

M.A. DEGREE EXAMINATION, NOVEMBER 2023.

Economics— Elective

BASIC ECONOMETRICS

Time : Three hours Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

I. (A) Multiple choice questions: (5 × 1 = 5)

1. What is the primary purpose of econometrics?

   (a) To make economic predictions

   (b) To using test economic theories data

   (c) To maximize profit in business

   (d) To study historical economic events

2. Which of the following is not a commonly used econometric tool?

   (a) Regression analysis

   (b) Time series analysis

   (c) Game theory

   (d) Hypothesis testing

3. When performing a simple linear regression, the co-efficient of determination (R–Squared) measures?

   (a) The strength of the relationship between the dependent and independent variables

   (b) The statistical significance of the co-efficient

   (c) The maginidute of multicolinearity in the model

   (d) The proportion of the variance in the dependent variable explained by the independent variable.

4. The Leontief inverse is used to ————

   (a) Calculate the gross domestic Product (GDP)

   (b) Determine the equilibrium price in a market

   (c) Find the inverse of the Input-Output Matrix

   (d) Analyze the interindustry relationships in an economy

5. What is the effect of Multi co linearity on regression analysis with dummy variables?

(a) It increase the stability of the regression coefficient

(b) It makes it impossible to estimate regression co efficient

(c) It has no effect on the regression analysis

(d) It inflates the standard errors of the coefficient

(B) Fill in the blanks: $(5 \times 1 = 5)$

6. In ———— the primary purpose is test economic theories using data.

7. The ———— variable in econometrics is the variable that is being predicted or explained.

8. A ———— in hypothesis testing occurs when a true null hypothesis is wrongly rejected.

9. The ———— statistic is used to test fro serial correlation in time series data

10. "In the field of finance, econometrics is frequently applied to analyze ———— data and model asset price movements".

II. Answer ALL questions: $(5 \times 2 = 10)$

11. Define Heteroscedasticity in econometrics.

12. Define a simple linear regression model.

13. Explain the purpose of including a constant (intercept) in a multiple regression model.

14. What is the concept of "Mixed stragey" in Game theory?

15. Write any two purpose of using dummy variables in time series analysis in econometrics?

SECTION B — $(5 \times 5 = 25)$

Answer ALL questions, choosing either (a) or (b).

16. (a) Give an interpretation for the following regression model. The model explains the relationship between the number of years of work experience and an individual's annual income. The model is:

$$Y = 30{,}000\ \beta o + 2{,}5000X\ R^2 = 0.72$$

Or

(b) Explain the concept of ANOVA and its application.

17. (a) Discuss the criteria and methods for selecting an appropriate econometric model.

Or

(b) Write down the consequences of Auto correlation?

18. (a) What is dummy Variable? Explain the purpose of using Dummy Variable In regression Analysis.

Or

(b) Explain the concept of distributed lag models in econometrics.

19. (a) Explain the concept of I-O analysis in econometrics. Provide a real world example to illustrate its application.

Or

(b) Describe the limitations and assumptions of I-O analysis in econometrics.

20. (a) Explain the concepts of Game theory in Econometrics.

Or

(b) Discuss the role of simultaneous games in Game theory.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Explain the steps involved in contacting a simple linear regression analysis and describe the interpretation of key result. Use an example to illustrate your explanation.

22. Explain how to detect auto correlation in time series data present method to address autocorrelation.

23. Describe how the dummy variables can be used to take into account seasonal effects.

24. Discuss the real world application of prisoners dilemma, particularly in economic and social contexts.

25. Discuss the common problems and challenges encounter in Econometric Research and provide examples to illustrate the issues.

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