Integrated M.A . Programme in Social Sciences (C.S.S) EXAMINATION, MARCH 2024
2021 ADMISSIONS REGULAR
SEMESTER VI - CORE COURSE ECONOMICS
EC06C28IM20 - Econometrics – II

Time : 3 Hours   **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight   **(8x1=8)**

1. What is the concept of parametric linearity?

2. What is a (k+1) variable regression model?

3. What is specification error or bias?

4. What is Mean Square Error (MSE)? What is its use?

5. What is the practical consequence of multicollinearity?

6. Differentiate between homoscedasticity and heteroscedasticity.

7. What are intrinsically linear and intrinsically non-linear regression models?

8. How does the manner of inclusion of stochastic error terms cause specification bias?

9. If you have monthly data over a number of years, how many dummy variables will you introduce to test the following hypotheses: (a) All the 12 months of the year exhibit seasonal patterns. (b) Only February, April, June, August, October, and December exhibit seasonal patterns.

10. What is ANCOVA model? Provide an example.

Part B

II. Answer any Six questions. Each question carries 2 weight   **(6x2=12)**

11. Write a short note on Multiple Linear Regression Model and its assumptions.

12. Elaborate the assumptions of MLRM and its interpretation.

13. State Gauss-Markov theorem. Prove the theorem diagrammatically.

14. Explain OLS estimation in the presence of Multicollinearity and its consequence.

15. Explain the method of Generalized Least Squares (GLS) with relevant equations.

16. Explain the six different types of specification errors with equations.

17. How does a dummy variable act as an alternative to Chow test?

18. Explain, in short, the problem of dummy variable trap.
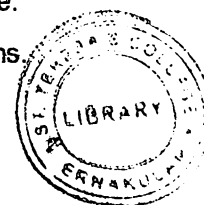
Part C

III. Answer any Two questions. Each question carries 5 weight   **(2x5=10)**

19. Using mathematical equations, elaborate the properties of OLS estimators.

20. Consider the following model: $Yi = \beta 1 + \beta 2$ Education $i + \beta 2$ Years of experience $+ ui$ Suppose you leave out the years of experience variable. What kinds of problems or biases would you expect? Explain in detail.

21. Discuss the various tests for the problem of Heteroscedasticity.

22. Elucidate the use of dummy variables for structural analysis.