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### THIRD SEMESTER M.A. DEGREE EXAMINATION, NOVEMBER 2025
(CBCSS - PG)

(Regular/Supplementary/Improvement)

### CC19PECO3C11 - BASIC ECONOMETRICS
(Economics)

(2019 Admission onwards)

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Time : 3 Hours            Maximum : 30 Weightage

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### Part A

Answer *all* questions. Each question carries 1/5 weightage.

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1. In a regression analysis, the values are fixed for the

   (a) Explanatory variables            (b) All variables

   (c) Dependent variables            (d) None of the variables

2. Standard error of an estimator is a measure of

   (a) Population estimator            (b) Power of the estimator

   (c) Confidence interval of the estimator            (d) Precision of the estimator

3. What is BLUE?

   (a) Best Linear Unbiased Estimator            (b) Biased Linear Unit Estimator

   (c) Bohr's Linear Unbiased Estimator            (d) Best Linear Unit Estimator.

4. If errors are not normally distributed, then the OLS estimators are

   (a) Biased            (b) Inefficient

   (c) Non-linear            (d) Still BLUE but t and F – tests are invalid

5. In hypothesis testing, the hypothesis tentatively assumed to be true is

   (a) the alternative hypothesis            (b) the null hypothesis

   (c) either the null or the alternative            (d) None of these alternatives is correct

6. As the number of explanatory variables increases in a regression model, the $R^2$ value

   (a) Definitely decrease            (b) Definitely increase

   (c) Definitely will not decrease            (d) Definitely will not increase

7. Multicollinearity is limited to

   (a) Cross-sectional data     (b) Time series data     (c) Pooled data     (d) All of the above

8. Autocorrelation problem is normally identified with

   (a) Explanatory Variable    (b) Dependent variable    (c) Random Variable    (d) None of the above

9. In testing the restrictions imposed on a model we calculate F-statistics and compare this value to the table F(m,n-k). In this formulae, 'm' is the
   (a) Number of regressors in the two models taken together
   (b) Sample size of the restricted model
   (c) Number of X variables dropped in the restricted model
   (d) Number of parameters estimated in the restricted model

10. Homoscedasticity refers to the error terms having
    (a) Zero mean      (b) Positive variance      (c) Constant variance      (d) Positive mean

11. For a regression through the origin, the intercept is equal to
    (a) 0      (b) 2      (c) 1      (d) -1

12. ANCOVA models include regressors that are
    (a) Only quantitative variables
    (b) Only qualitative variables
    (c) Only categorical variables
    (d) Both qualitative and quantitative variables

13. When specification error may be caused due to not knowing the true regression model to begin with, such an error is known as.
    (a) Model mis-specification error
    (b) Model specification error
    (c) Wrong functional form
    (d) Error of measurement bias

14. A data point that is disproportionately distant from the bulk of the values of a regressor(s) is
    (a) Leverage point      (b) Outlier      (c) Influence point      (d) Missing data

15. In LPM, the error term follows.
    (a) normal distribution
    (b) Chi-square distribution
    (c) Bernoulli probability distribution
    (d) Logistic distribution

**(15 × 1/5 = 3 Weightage)**

**Part B** (Very Short Answer Questions)

Answer any *five* questions. Each question carries 1 weightage.

16. Define Econometrics.

17. Explain the assumption of multicollinearity in regression model.

18. Define $r^2$.

19. Write a note on prediction in econometrics.

20. Define the maximum likelihood method.

21. Explain the process of hypothesis testing about individual regression coefficients.

22. What is Goldfeld-Quandt test?

23. Define the concept of ANCOVA.

**(5 × 1 = 5 Weightage)**

**Part C** (Short Answer Questions)

Answer any *seven* questions. Each question carries 2 weightage.

24. Explain the role and significance of stochastic error term.

25. Explain the assumptions of multiple regression equations.

26. Explain the coefficient of determination in a multiple regression model.

27. Explain the testing for structural or parameter stability of regression models.

28. Explain the methods of detection of autocorrelation problem.

29. Explain regression through origin.

30. Explain the functional form used to measure elasticity.

31. Explain the piecewise linear regression.

32. Explain the consequences of model specification errors.

33. Explain errors of measurement.

**(7 × 2 = 14 Weightage)**

**Part D** (Essay questions)

Answer any *two* questions. Each question carries 4 weightage.

34. Define econometrics and its uses. Bring out the methodology and limitations of econometrics.

35. Explain Gauss Markov theorem.

36. Explain the nature, causes, consequences, detection and remedial measures of multicollinearity.

37. Explain the three approaches to developing a probability model for a binary response variable.

**(2 × 4 = 8 Weightage)**

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