D3AEC2203 **(4 Pages)** **Name.....**
Reg.No.....

THIRD SEMESTER M.A. DEGREE EXAMINATION, NOVEMBER 2023
(Regular/Improvement/Supplementary)

ECONOMICS
FECO3C11 - BASIC ECONOMETRICS

Time: 3 Hours **Maximum Weightage: 30**

Part A: Multiple choice questions. Answer *all* questions. Each carries $^1/_5$ weightage.

1. The term random is synonymous for the term:

   (a) Exact.
   (b) Deterministic.
   (c) Non-probability.
   (d) Stochastic.

2. Coefficient of determination is a measure of:

   (a) Correlation between X and Y.
   (b) Fit of population regression line to data.
   (c) Fit of sample regression line to data.
   (d) None of the above.

3. The value of the Durban-Watson *d*-statistic :

   (a) Varies between 0 and 4.
   (b) Varies between -4 and 4
   (c) Is always positive.
   (d) Can be positive or negative.

4. The term ‘regression’ was coined by

   (a) Francis Galton.
   (b) Carl Frederic Gauss.
   (c) H.Theil.
   (d) Arthur S. Goldberger.

5. The dummy variable trap is a case of :

   (a) Non Collinearity.
   (b) Perfect Collinearity.
   (c) Imperfect Collinearity.
   (d) None of these.

(P.T.O.)

6. The lowest level of significance at which a null hypothesis is rejected is:

(a) *t* value.
(b) P value.
(c) F value.
(d) χ^2 value.

7. Errors in the measurement of the variables in a regression model makes the estimates:

(a) Biased.
(b) Inconsistent.
(c) Biased and Inconsistent.
(d) Biased and Inefficient.

8. In the presence of autocorrelation OLS estimators are:

(a) Linear.
(b) Unbiased.
(c) Inefficient.
(d) Consistent.

9. Goodness of fit of two sample distribution is tested with the help of:

(a) *t*-test.
(b) F-test.
(c) χ^2 test.
(d) None of these.

10. In the lin log model $Yi = \beta1 + \beta2\ lnXi$ elasticity is given by:

(a) $\beta2(1/X)$
(b) $\beta2(1/Y)$
(c) $\beta2(X)$
(d) $\beta2(Y)$

11. If the variables in a multiple correlation are not correlated, then the regression is said to be:

(a) Nonlinear.
(b) Partial.
(c) Stepwise.
(d) Orthogonal.

12. Standard error is defined as:

(a) Standard deviation of the sample.
(b) Standard deviation of the sampling distribution.
(c) Variance of the sampling distribution.
(d) Standard deviation of the population.

13. In the model $Y = \beta 1 + \beta 2\ Xi + Ui$, if $E(Ui) = \sigma^2$, is a case of:

    (a) Multicollinearity.
    (b) Homoscedasticity.
    (c) Heteroscedasticity.
    (d) None of the above.

14. Data collected for the same set of variables for many time periods is an example of:

    (a) Cross sectional data.
    (b) Time series data.
    (c) Pooled data.
    (d) Panel data.

15. When one or more of the regressors are linear combinations of the other regressors, it is called:

    (a) Heteroscedasticity.
    (b) Autocorrelation.
    (c) Serial correlation.
    (d) Multicollinearity.

($15 \times {}^{1}/_{5} = 3$ weightage)

Part B: Very short answer questions. Answer any *five* questions. Each carries *one* weightage.

16. Explain the role of random term in an econometric model.
17. What do you mean by multicollinearity?
18. Define a logit model.
19. State the properties of F distribution.
20. Explain the significance of the value of R^2 in a regression model.
21. Briefly explain restricted least squares.
22. Differentiate between Type I and Type II error.
23. Define a Lin-log model.

($5 \times 1 = 5$ weightage)

Part C: Short answer questions. Answer any *seven* questions. Each carries *two* weightage.

24. Examine regression analysis in the light of ANOVA.
25. Write a note on piece-wise linear regression.
26. Examine the Chow test in the multiple regression analysis.
27. Explain the concept of PRF and SRF.

(P.T.O.)

28. Write notes on Runs test.
29. What do you mean by dummy variable trap? How is it possible to overcome the trap?
30. Discuss the consequences of autocorrelation.
31. Explain the tests for incorrect functional form.
32. Examine the reasons behind the normality assumption of random variable.
33. What are the consequences of specification error? Explain.

(7 × 2= 14 weightage)

Part D: Essay questions. Answer any *two* questions. Each carries *four* weightage.

34. Explain the matrix approach to estimation and derivation of the properties of OLS estimators.
35. What are the causes of heteroscedasticity? How is it detected? Suggest remedial measures.
36. What is Durbin-Watson test? Explain its method and decision rules of Durbin-Watson d test.
37. Explain Maximum Likelihood estimation of two variable regression models.

(2 × 4= 8 weightage)