

C 5582

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Name.....

Reg. No.....

**SECOND SEMESTER M.A. DEGREE (REGULAR) EXAMINATION****APRIL 2021**

(CBCSS)

Econometrics

ECM 2C 05—ECONOMETRIC THEORY—I

(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. In cases where choices are provided, students can attend all questions in each section.
2. The minimum number of questions to be attended from the Section / Part shall remain the same.
3. The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.
4. There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.

**Part A (Multiple Choice Questions)***Answer all questions.**Each question carries a weightage of 1/5.*

1. The failure to reject the null hypothesis when it is false :
  - a) Type I Error.
  - b) Type II Error.
  - c) Two-sided alternative.
  - d) Trending Process.
2. The variance of the error term, given the explanatory variables, is not constant, known as :
  - a) Auto correlation.
  - b) Homoskedasticity.
  - c) Heteroskedasticity.
  - d) Multicollinearity.
3. Which among the following is a test for autocorrelation ?
  - a) White Test
  - b) Heckit Method.
  - c) Durbin-Watson (DW) Statistic
  - d) Dickey-Fuller (DF) Test.

**Turn over**

4. A measure of linear dependence between two random variables is :
- a) Covariance.
  - b) Correlation Co-efficient.
  - c) Covariate.
  - d) Conditional Variance.
5. \_\_\_\_\_ is an unknown value that describes a population relationship.
- a) Estimate.
  - b) Parameter.
  - c) Estimator.
  - d) Error term.
6. \_\_\_\_\_ a goodness-of-fit measure in multiple regression analysis.
- a) Autocorrelation.
  - b) Co-efficient of Determination.
  - c) Adjusted R - Squared.
  - d) R - Squared.
7. The difference between the actual value and the fitted (or predicted) value is known as :
- a) Response Variable.
  - b) Sample Covariance.
  - c) Residual.
  - d) Sample Variance.
8. A sequence of random variables indexed by time is called a :
- a) Cross Sectional analysis.
  - b) Panel Data analysis.
  - c) Time series process.
  - d) Regression analysis.
9. The sum of 'n' numbers divided by 'n' is.
- a) Mode.
  - b) Median.
  - c) Average.
  - d) Base Period.
10. In Multiple Regression, the partial effect of one explanatory variable depends on the value of different explanatory variable is
- a) Intercept shift.
  - b) Langrange Multiplier Statistic.
  - c) Interaction Effect.
  - d) Intercept Parameter.
11. \_\_\_\_\_ is a variable that takes on non-negative integer values.
- a) Count Variable.
  - b) Control Variable.
  - c) Binary Variable.
  - d) Exogenous Variable.
12. A function whose slope is not constant is :
- a) Nonlinear function.
  - b) Normal distribution.
  - c) Linear function.
  - d) Intercept shift.

13. A variable whose outcome is uncertain is:
- Predictor variable.
  - Random variable.
  - Proxy variable.
  - Dummy variable.
14. The numerical value taken on by an estimator for a particular sample of data is :
- Estimator.
  - Parameter.
  - Estimate.
  - Error Term.
15. A statistic used to test for auto correlation of a regression model under classical linear model assumption is :
- Descriptive Statistic.
  - Durbin Watson Statistic.
  - Chow Statistic.
  - Asymptotic 't' Statistic.

(15 × 1/5 = 3 weightage)

### Part B (Very Short Answer Questions)

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

- Define Econometrics.
- What do you mean by an estimator ?
- Define Cross sectional data
- What is  $R^2$  ?
- Define normal distribution
- What do you mean by Dummy variable ?
- Write a note on F test.
- Define standard error

(5 × 1 = 5 weightage)

### Part C (Short Answer Questions)

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

- Explain the Scope and limitations of econometric approach
- Write a brief note on Multiple Linear Regression Model.

**Turn over**

26. Distinguish between Population Regression Function and Sample Regression Function.
27. Explain the Dummy Variable Trap. Illustrate your answer with an example.
28. Discuss the properties of OLS.
29. Briefly discuss ANOVA.
30. Distinguish between type I error and type II error.
31. Write a brief note on Durbin Watson Statistic.
32. What do you mean by Goodness of Fit measure ? Explain.
33. Explain the Piecewise Linear Regression.

(7 × 2 = 14 weightage)

#### Part D (Essay Questions)

*Answer any two questions.*

*Each question carries a weightage of 4.*

34. Elaborate BLUE properties. State and prove that the OLS estimators are BLUE.
35. Explain the methodology of Econometrics.
36. Discuss the reasons for the occurrence of multicollinearity and explain the remedies for it.
37. Explain the assumptions of Classical Linear Regression model.

(2 × 4 = 8 weightage)