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(Pages : 4)

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Economics

ECO 3C 10—BASIC ECONOMETRICS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A (Multiple Choice Questions)

Answer all questions.

Each question carries 1 mark.

1. In a two variable regression Y is dependent variable and X is independent. If the correlation co-efficient Y and X is 0.6, then which one of the following result is correct :
 - a) 6 % variations in Y are explained by X.
 - b) 60 % variations in Y are explained by X.
 - c) 36 % variations in Y are explained by X.
 - d) 0.6 % variations in Y are explained by X.
2. What will be the properties of the OLS estimator in the presence of multicollinearity ?
 - a) It will be consistent unbiased and efficient.
 - b) It will be consistent and unbiased but not efficient.
 - c) It will be consistent but not unbiased.
 - d) It will not be consistent.
3. R^2 refers to :
 - a) Co-efficient of determination.
 - b) Co-efficient of correlation.
 - c) Square of correlation co-efficient.
 - d) Both a) and c).

Turn over

4. Durbin test is used in :
- a) Autocorrelation.
 - b) Multicollinearity.
 - c) Heteroscedasticity.
 - d) Overall significance of regression.
5. The method used to remove the correlation between Y_{t-1} and the error term in Koyck adaptation expectation model is :
- a) Weighted least square method.
 - b) Dummy variable model.
 - c) Instrumental variable model.
 - d) None of these.
6. Under the problem of heteroscedasticity, OLS estimates are :
- a) BLUE.
 - b) Not BLUE.
 - c) Efficient.
 - d) None of these.
7. After running an OLS regression, the reported R^2 is :
- a) Never smaller than the adjusted R^2 .
 - b) A number lying between -1 and $+1$.
 - c) One minus the sum of squared errors divided by the variation in the independent variables.
 - d) None of the above.
8. In the CLRM, u (the error term) is, among other things :
- a) The influence of the variables in the model.
 - b) Measurement errors or human error.
 - c) That which affects the var. dependent and can be observed.
 - d) None of the above.
9. The sample value of a population characteristic is known as :
- a) Parameter.
 - b) Moment.
 - c) Stochastic term.
 - d) Statistic.
10. The variable Fringe is interpreted as :
- a) Being on the Left or on the Right.
 - b) Being on both the Left and the Right.
 - c) Being twice the value of being on the Left or being on the Right.
 - d) None of these.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

*Answer any five questions.
Each question carries 2 marks.
Answer in one or two sentences each.*

11. What is stochastic variable ?
12. What is 'Line of Best Fit' ?
13. Why we estimate Standard Error ?
14. Distinguish between time series data and cross-section data.
15. What are the important goals of Econometrics ?
16. What are the reasons for lags ?
17. What is Instrumental variable ?
18. List the types of Econometric data.

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
Each question carries 5 marks.*

19. Distinguish between point estimation and interval estimation.
20. What are the important assumptions of Gauss - Markov theorem ?
21. Explain multiple linear regression models.
22. Distinguish between R^2 and adjusted R^2 . Show that R^2 is greater than adjusted R^2 .
23. What is Multicollinearity ? What are the consequences of multicollinearity ?
24. Explain the nature and consequences of Autocorrelation.
25. What are the uses of Instrumental Variables ?
26. Explain adaptive expectation models and partial adjustment models.
27. What is the role of lags in economics ?
28. Explain various test statistics used in a regression model.

Turn over

29. What is econometric model ? Justify the insertion of the stochastic error term in an econometric model.
30. Explain the concept of three Stage Least Squares (3SLS).

(8 × 5 = 40 marks)

Part D (Essay Type Questions)

*Answer any **two** questions.*

Each question carries 10 marks.

31. Discuss the method of estimating Simultaneous Equation Models.
32. For a two variable model $Y_i = \alpha + \beta X_i + u_i$, show that in the presence of autocorrelation, the OLS estimators are still Linear Unbiased but they are no longer efficient.
33. Elaborate on the estimation of dummy variables. Do you think it is important to use dummy variables in economic analysis ? Justify.
34. Discuss in detail the OLS method and explain its merits and demerits.

(2 × 10 = 20 marks)

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(Pages : 3)

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THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Financial Economics

FEC 3C 10—BASIC ECONOMETRICS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Multiple Choice Questions :

1. _____ is a variable that takes on non-negative integer values.
 - a) Count Variable.
 - b) Control Variable.
 - c) Binary Variable.
 - d) Exogenous Variable.
2. The mistake of including too many dummy variables among the independent variables is :
 - a) Errors in Variables.
 - b) Dummy dependent variable.
 - c) Dummy variable trap.
 - d) Dummy variable regression.
3. The numerical value taken on by an estimator for a particular sample of data is :
 - a) Estimator.
 - b) Parameter.
 - c) Estimate.
 - d) Error Term.
4. In Multiple Regression, the partial effect of one explanatory variable depends on the value of a different explanatory variable is :
 - a) Intercept shift.
 - b) Lagrange Multiplier Statistic.
 - c) Interaction Effect.
 - d) Intercept Parameter.
5. _____ is a data set constructed from repeated cross-sections overtime.
 - a) Time series data.
 - b) Cross-sectional data.
 - c) Panel data.
 - d) Data frequency.
6. _____ is an unknown value that describes a population relationship.
 - a) Estimate.
 - b) Parameter.
 - c) Estimator.
 - d) Error term.

Turn over

21. What do you mean by an Instrument variable ? Explain its uses.
22. Write on autocorrelation and its causes.
23. What is the problem of heteroscedasticity ? How can it be avoided ?
24. What is meant by 'specification error' in a regression model ? Indicate the different types of specification error.
25. State the problem of Identification. Explain the rules for identification.
26. Explain the method of Indirect Least Square.
27. Discuss the Asymptotic properties of OLS.
28. Explain the Scope and limitations of econometric approach.
29. Define Multicollinearity. Discuss the remedies for it.
30. Describe the F test and ANOVA.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)

Answer any two questions.

Each question carries 10 marks.

31. What distinguishes Econometrics from purely mathematical economics and from economic theory ? Briefly discuss the steps involved in econometric analysis.
32. Explain BLUE properties. State and prove that the OLS estimators are BLUE. .
33. Evaluate the different methods of estimation of a system of simultaneous equations.
34. Give a brief idea about the distributive lag models.

(2 × 10 = 20 marks)

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(Pages : 3)

Name.....

Reg. No.....

THIRD SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021

(CCSS)

Financial Economics

FEC 3C 10—BASIC ECONOMETRICS

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Multiple Choice Questions :

1. The term 'Econometrics' was coined by :
(a) Ragnar Frish. (b) Jan Tinbergen.
(c) Koyck. (d) Alt.
2. Linearity assumption coincides with _____ assumption.
(a) Additive. (b) Proportionality.
(c) Substitutability. (d) Constancy.
3. Weighted least square method is a remedy for _____ problem.
(a) Multicollinearity. (b) Autocorrelation.
(c) Heteroscedasticity. (d) Specification error.
4. The equality between means of two sample data is tested with :
(a) *t*-test. (b) F-test.
(c) χ^2 -test. (d) ANOVA.
5. _____ is the difference between actual and estimated Y values.
(a) Slope. (b) Intercept.
(c) Lag. (d) Residual.
6. Suppose that observations are available on the monthly bond prices of 100 companies for 5 years. What type of data are these ?
(a) Cross-sectional. (b) Time series.
(c) Panel. (d) Qualitative.

Turn over

7. Dummy variable trap arises due to —————
- (a) Multicollinearity.
 - (b) Heteroscedasticity.
 - (c) Autocorrelation.
 - (d) Simultaneity.
8. If a Durbin-Watson statistic takes a value close to zero, what will be the value of the first order autocorrelation coefficient?
- (a) Close to 0.
 - (b) Close to +1.
 - (c) Close to -1.
 - (d) Ranges from -1 to +1.
9. Profits of a firm depend on the current sales and past period ($t - 1$) profits of the firm. This is an example of:
- (a) Distributed lag model.
 - (b) Autoregressive model.
 - (c) Linear programming.
 - (d) Lagrangian model.
10. Expressing each endogenous variable as function of predetermined variable and random error term is:
- (a) The structural equation.
 - (b) Linear equation.
 - (c) Reduced form equation.
 - (d) Simultaneous equation.

(10 × 1 = 10 marks)

Part B (Very Short Answer Questions)

Answer any five questions.

Each question carries 2 marks.

Answer in one or two sentences each.

- 11. Define cross-sectional data with an example.
- 12. State Gauss-Markov theorem.
- 13. Define an unbiased estimator with example.
- 14. Define dummy variable trap.
- 15. What do you mean by heteroscedasticity?
- 16. Define AR (1) scheme.
- 17. What do you mean by short run in a distributed-lag model?
- 18. When does an identified equation exactly identified and over identified?

(5 × 2 = 10 marks)

Part C (Short Answer Questions)

*Answer any eight questions.
Each question carries 5 marks.*

19. Discuss the desirable properties of an econometric model.
20. Explain the assumptions of classical linear regression model.
21. Explain the remedial measures of multicollinearity.
22. Explain Goldfeld-Quandt test.
23. Explain the procedure of Durbin-Watson test for autocorrelation.
24. Explain the role of lags in economics.
25. Discuss the features of Koyck transformation.
26. Explain the rules for identification.
27. Explain log-lin and lin-log models.
28. Explain Park test and Glejser test.
29. Explain dummy variable regression model. Also explain its features.
30. Discuss the method of three stage least squares.
31. Given the following sample data on two variables, X and Y:

$$\sum X_i = 70, \sum Y_i = 50, \sum X_i^2 = 532, \sum Y_i^2 = 268, \sum X_i Y_i = 374 \text{ and sample size} = 10.$$

Estimate the linear regression of Y on X.

(8 × 5 = 40 marks)

Part D (Essay Type Questions)

*Answer any two questions.
Each question carries 10 marks.*

32. Explain the classical methodology of econometrics.
33. Explain the remedial measures of heteroscedasticity.
34. Discuss the nature of autocorrelation. Also explain its reasons and practical consequences.
35. Explain simultaneous equation bias with an example.

(2 × 10 = 20 marks)