D 6895 (Pages : 4) Name.....

Reg. No.....

THIRD SEMESTER M.A. DEGREE EXAMINATION, DECEMBER 2016

(CUCSS)

Economics

ECO 3C 12—BASIC ECONOMETRICS

(2015 Admissions)

Time : Three Hours Maximum : 36 Weightage

Part A

Answer **all** *questions.*

Each question carries ¼ weightage.

1. The term random is synonymous for the term :

   (a) Deterministic. (b) Exact.

   (c) Stochastic. (d) Non-probability.

2. If the mean and variance of time series do not vary systematically overtime it is called :

   (a) Stationary. (b) Random.

   (c) Non-stationary. (d) Non-random.

3. The meaning of linearity in regression theory is that it is :

   (a) Linear in variables. (b) Linear in variables non-linear in parameters.

   (c) Linear in parameters. (d) Linear in variables and parameters.

4. The identical conditional variance of the random term given the explanatory variable is called :

   (a) Heteroscedasticity. (b) Homoscedasticity.

   (c) Multicollinearity. (d) Serial correlation.

5. In a double log model of type the coefficient β stands for the :

   (a) Slope. (b) Slope and Elasticity.

   (c) Elasticity. (d) Slope, not Elasticity.

6. The sample correlation coefficient can be positive or negative, and the multiple correlation coefficient can be :

   (a) Positive or Negative. (b) Negative.

   (c) Positive. (d) Any of the three cases.

Turn over

7. When a linear function is fitted to non-linear data set it will result in :

(a) Specification error. (b) Sampling error.

(c) Measurement error. (d) None of the above.

8. Which one of the following is not a plausible remedy for near multicollinerity ?

(a) Use principal component analysis. (b) Drop one of the collinear variables.

(c) Use a longer run of data. (d) Take logarithms of each of the variables.

9. The number of independent values assigned to a statistical distribution is called :

(a) Degrees of freedom. (b) Goodness of fit.

(c) Trial and error. (d) None of the above.

10. One of the graphical tool for detecting correlation is :

(a) Box plot. (b) Carpet plot.

(c) Biplot. (d) Scatter plots.

11. Which of the following is used to detect specification errors ?

(a) The Park test. (b) Ramsey's RESET test.

(c) Chow test. (d) The Runs test.

12. Which of the following model is used to regress on dummy dependent variable ?

(a) The LPM model. (b) The tobit model.

(c) The logit model. (d) All of the above.

(12 × ¼ = 3 weightage)

Part B

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

13. Convert the model $y = ab^x$ to model that is linear in parameters ?

14. Why do you use OLS estimator ? Explain.

15. What do you mean by independently and identically distributed random variable ? Explain.

16. Examine the law of large numbers.

17. What does multiple correlation coefficient measure ?

18. Explain the concept of confidence interval for population mean.

19. What is the general form of '*t*' statistic ?

20. Explain the concept of omitted variable bias.

(5 × 1 = 5 weightage)

Part C

Answer any **eight** *out of eleven questions.*
Each question carries 2 *weightage.*

21. Explain the structural form, reduced form and final form of an econometric model.

22. What is the role of disturbance term in an econometric model ? Explain.

23. Explain the types of specification errors.

24. Explain the assumptions of Durbin-Watson d statistics.

25. Explain Gauss-Markov theorem.

26. What do you mean by dummy variable trap ? How to overcome the trap ?

27. Discuss the methods of detecting heteroscedasticity.

28. Examine regression analysis in the light of ANOVA.

29. Distinguish between static and dynamic econometric model.

30. Explain the procedure of restricted least squares in two variable case.

31. Explain the consequence of omitting a relevant variable in a regression model.

(8 × 2 = 16 weightage)

Part D

Answer any **three** *out of five questions.*
Each question carries 4 *weightage.*

32. Examine the assumptions behind the method of least squares.

33. Given a data set relating to demand for and price of a particular commodity :

Quantity Demanded	18	22	24	25	26	26	30	32	32	35
Price	100	180	175	160	150	142	138	120	118	100

Estimate the demand function and compute the price elasticity coefficient at each point .

Turn over

34. Compute coefficient of determination from the following data and interpret the result :

X	10	15	12	13	14	17	18	20	21	20
Y	14	13	18	20	26	28	20	30	40	41

35. Discuss various functional forms of regression models.

36. Estimate the compound growth rate from the following data set relating to GDP of a hypothetical country over a period of ten years :

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GDP in millions of rupees	110	115	120	125	128	130	138	142	145	147

(3 × 4 = 12 weightage)