C 23324-A (Pages : 4) Name.....

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2017

(CUCBCSS—UG)

Complementary Course

ME 4C 04—MATHEMATICAL ECONOMICS

(Multiple Choice Questions for SDE Candidates)

Time : 15 Minutes	Total No. of Questions : 20	Maximum : 20 Marks

INSTRUCTIONS TO THE CANDIDATE

1. This Question Paper carries Multiple Choice Questions from 1 to 20.
2. The candidate should check that the question paper supplied to him/her contains all the 20 questions in serial order.
3. Each question is provided with choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and enter it in the main answer-book.
4. The MCQ question paper will be supplied after the completion of the descriptive examination.

ME 4C 04—MATHEMATICAL ECONOMICS

(Multiple Choice Questions for SDE Candidates)

1. Which of the following discipline express the economic theory in mathematical form :

   (A) Econometrics. (B) Statistics.

   (C) Mathematics. (D) Mathematical Economics.

2. Keynes postulated ———— relationship between income and consumption.

   (A) Negative. (B) Positive.

   (C) Non-linear. (D) Infinite.

3. In the Keynesian linear consumption function $Y = \beta_1 + \beta_2 X$, Y represents :

   (A) Income. (B) Consumption expenditure.

   (C) Output. (D) Price.

4. In the Keynesian linear consumption function $Y = \beta_1 + \beta_2 X$, the parameters of the model are :

   (A) β_1 and β_2. (B) β_1 and X.

   (C) X and Y. (D) Y and β_2.

5. If the model has only one equation, the model is called :

   (A) Single equation model. (B) Multiple equation model.

   (C) Variable equation model. (D) None of the above.

6. The term regression was first introduced by :

   (A) Irwing Fisher. (B) Laspayer.

   (C) Francis Galton. (D) Pearson.

7. The function $Y = \beta_1 + \beta_2 X + u$ is an example of :

   (A) Non-linear regression model. (B) Linear regression model.

   (C) Quadratic regression model (D) None of the above.

8. In the Keynesian linear consumption function $Y = \beta_1 + \beta_2 X$ the independent variable is :

(A) β_1. (B) X.

(C) Y. (D) β_2.

9. Statistical relationships assumes that variables are :

(A) Random. (B) Stochastic.

(C) All of the above. (D) None of the above.

10. A statistical relationship per say cannot logically imply :

(A) Regression. (B) Causation.

(C) Error. (D) Random.

11. Qualitative variables are also called :

(A) Quantitative variables. (B) Dummy variables.

(C) Linear variables. (D) Log linear variables.

12. Conditional mean of Y given X value is denoted as :

(A) ConY. (B) E (Y/X).

(C) Prob (Y/X). (D) E (X/Y).

13. The regression line or curve passes through :

(A) Origin. (B) Vertical axis.

(C) Horizontal axis. (D) Conditional means.

14. The regression function $E(Y/X_i) = \beta_1 + \beta_2 X_i$ is a :

(A) Linear regression function. (B) Sample regression function.

(C) Non-linear regression function. (D) Log linear regression function.

15. The regression function $E(Y/X_i) = \beta_1 + \beta_2 X_i$, β_2 is :

(A) A intercept co-efficient. (B) Slope co-efficient.

(C) Variable. (D) Average value.

16. The Gaussian standard classical linear regression model assumes ———— assumptions.

(A) Seven. (B) Ten.

(C) Five. (D) Eight.

17. The numerical value obtained by the estimator in an application is known as :

(A) Estimate (B) Estimator

(C) Population. (D) Co-efficient.

18. The literal meaning of econometrics is :

(A) Estimation. (B) Economic measurement.

(C) Forecasting. (D) Testing.

19. In the function $Q = \alpha + \beta P$, intercept co-efficient is :

(A) α. (B) β.

(C) P. (D) Q.

20. Given any two X values the classical linear regression model assumes the correlation between the disturbances as :

(A) One. (B) Infinity.

(C) Negative. (D) Zero.

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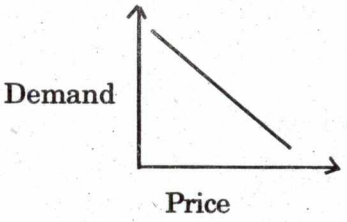
ME 4C 04—MATHEMATICAL ECONOMICS

Time : Three Hours Maximum : 80 Marks

Part A

Answer **all the twelve** *questions.*

1. State Keynesian theory of consumption.
2. Define a random or stochastic variable.
3. Distinguish between Regressor and Regressand.
4. Based on the following graph, what is the relation between price and demand :



5. Define a population regression curve.
6. Define the term estimator or statistic.
7. Write the general firm of a linear regression model.
8. State Gauss-Markov theorem.
9. Which is the most commonly used measure of the goodness of fit of a regression line ?
10. Draw the Scatter diagram when the co-efficient of correlation is $r = +1$.
11. State the relationship between the slopes in the regression of Y on X and X on Y.
12. Define the terms Null hypothesis and alternative hypothesis.

(12 × 1 = 12 marks)

Turn over

Part B

Answer any **six** *questions.*

13. A quantitative estimate of Marginal propensity to consume MPC provides valuable information for policy purposes—Explain.
14. Explain the term Regression analysis.
15. Distinguish between Regression and correlation.
16. Distinguish between conditional expected values and unconditional expected values.
17. What is the role of the stochastic error term is in regression analysis ?
18. Define a Best Linear Unbiased Estimator (BLUE).
19. Define Type I and Type II errors.
20. Write the decision rule for two-tail test.
21. Write the general form of log linear model. How the co-efficient attached to the log of a regressor is interpreted ?

(6 × 3 = 18 marks)

Part C

Answer any **six** *questions.*

22. Discuss the three types of data used for empirical analysis.
23. Explain the concept of Sample Regression Function (SRF).
24. Which are the properties of regression line obtained by using OLS estimators.
25. Give the explanation of the co-efficient of determination r^2 using Venn diagram.
26. Calculate the coefficient of correlation r for the following data :

X :	2	3	4	5	6	7	8
Y :	4	5	6	12	9	5	4

27. Discuss the confidence interval for regression co-efficient β_2.
28. Write a note on Jarque-Bera (JB) test of normality.
29. Discuss the Log-Lin model.
30. What is the advantages of the standardized regression model over the traditional model ?

(6 × 5 = 30 marks)

Part D

Answer any **two** *questions.*

31. Define co-efficient of correlation. Write the computational formula. Also write the properties.

32. From the data given below find the regression equation of x on y :

x :	5	6	7	3	2
y :	4	5	8	2	1

33. Write notes on :
    (i) Reciprocal model.
    (ii) t-distribution.

$(2 \times 10 = 20$ marks)