## FOURTH SEMESTER M.A. DEGREE EXAMINATION, MAY 2014

### (CUCSS)

Applied Economics

IX—MATHEMATICAL ECONOMICS

Time : Three Hours                                                  Maximum : 36 Weightage

### Part A

*Answe* **all** *questions.*

*Each bunch of* **four** *question carries a weightage of 1.*

(A) Multiple Choice :

1 Non-Satiety is one of the assumptions of :

    (a)  CES production function.    (b) CD production function.

    (c) Indifference Curve analysis.    (d) None of the above.

2    $\dfrac{\Delta(K/L)}{\Delta(MRTS_{LK})} \cdot \dfrac{MRTS_{LK}}{K/L}.$

    (a) MRS.    (b)  MRTS.

    (c) Elasticity of substitution.    (d) None of the above.

3   CES production function considers only :

    (a) Two factors of production.    (b) The factors of production.

    (c) Four factors of production.    (d) None of the above.

4 Indifference curve approach was first developed by :

    (a) Edgeworth.    (b)  J.R. Hicks.

    (c)  R.G.D. Allen.    (d) None of the above.

(B) Multiple Choice :

5 The generalized form of Slutsky's equation is :

(a) Normal good if $\frac{\partial q_j}{p_j} < 0.$            (b)  Giffen good if $a \frac{\hat{q}_j}{p_j} > 0.$

(c) Inferior good if $\frac{\partial q_j}{} < 0.$            (d) All the above

6  CES function are linearly homogenous but :

(a) $a \neq 1.$                                    (b)  $\sigma \neq 0.$

(c) $a = 1.$                                    (d) $a = 0.$

7 Max : $f = 2x + 5y$  is a :

(a) Subjective function.            (b) Objective function.

(c) Structural constraints.            (d) None of the above.

8 Every LP problem in its standard form involves.

(a) Objective function.            (b) Structural constraints.

(c) Non-negativity constraints.            (d) All the above.

(C) Fill up the blanks :

9 The sign 'of _____ is always negative in Slutsky equation.

10  Translog production function enables the measurement of _____

11 Input output analysis was propounded by _____

12 Simplex method is associated with _____

(D) True *or* False :

13 Income elasticity of demand is always positve.

14 Consumer choice under risk was explained by Dusenberry.

15 One of the Hawkins-Simon condition is determinant of the matrix must always be positive.

16 An Input-Output model which has endogenous final demand vector is known as Dynamic I-0 model.

(16 x ¼ = 4  weightage)

## Part B

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

17 Write a short note on properties of demand function.

18 What is homothetic utility function ?

19 What is duality in consumption ? Illustrate.

20 What are the properties of C-D function ?

21  Expalin input demand function.

22 What is generalized Leontief cost function ?

23 What is price discrimination ?

24  Expalin Stackelberg model.

25 Define multi period consumption and give suitable example.

26 Briefly explain the determination of interest rates.

27 What is pure strategy ? Explain.

28 Write a note on complementary slackness theorem.

(10 x 2 = 20  weightage)

## Part C

*Answer any* three *questions.*

*Each question carries a weightage of* 4.

29 Given the utility function $U = x^2 + 3xy - 5y^2$, price of commodity $x$ is Rs. 2, price of commodity y is Rs. 3 and consumer's money income Rs. 6. Find out the equilibrium level of consumption of commodities $x$ and y. Also prove the conditions for maximization.

30 Explain the salient features of Translog production function. Elucidate its significance.

Turn over

31 Comment on "Revenue maximizing monopoly".

32 Briefly discuss the investment theories of firm.

33 Solve the following LP problem by simple method :

Minimize : $f = 9x + 12y + 15z$

subject to : $2x + 2y + z \quad 10$

$2x + 3y + z \quad 12$

$x + y + 5z \quad 14$

$x, y, z \quad 0.$