M.A (PREVIOUS) EMAMINATION 2002 HELD IN 2003

ECONOMICS (PAPER-V-C)

(MATHEMATICAL ECNOMICS)

Time: 3 Hours **Max.Marks:100**

Instructions:

(1) Attempt any five questions.

(2) All question carry equal marks.

Q.1 The equilibrium condition for three related market is given by:

$X + y + 2z = 3$

$2x + 3y + 2z\ 4$

$X + 3z = 5$

Find the equilibrium quantity for each market using matrix inversion method.

Q.2 Consider the following equations of four sector economy.

$C = 375 + 0.75\ yd.$ $1 = 405 – 10i$ $G = 600$

$T = 57 + 0.3y$ $x = 285$ $M = 0.09y$

$Md = 45 + 0.25y – 10\ I,$ $Ms = 540$

(i) Calculate the equilibrium values of income and rate of interest.

(ii) It Government increases income tax rate form t = 0.3 to t = 0.4 how will this effect the equilibrium income.

(iii) How government can achieve the objective of increasing the equilibrium output by 508 units.

Q.3 (a) the demand and supply equation of a single commodity are given respectively as.

$P + Q^2 + 5Q = 39$ and $12Q = 19$

Determine the equilibrium values of price and quantity.

(b) Given $f(x) = x^2$ ex $\log x^{2,}$ determine the elasticity of f(x)/x.

Q.4 Examine the comparative static properties of the equilibrium price and quantity, given partial equilibrium market model as follows:

Qd = a – bp demand curve.

Qs = - c + dp Supply curve.

Qd = Qs a, b, c, d, > 0

Q.5 (a) Given the function $f(xy) = 2x^2 + 24x – y^2 + 30y$ determine the location and nature of any stationary pains.

(b) If the total cost function for a good is $C(x) =(x+4)^3$, where x represents the number of hundred of units produced. How many units will minimize average cost?

Q.6 An approximate demand function which expresses the daily ridership as a function of the fare charged is q= 10,000 – 125p, where “q’ equals the numbers of riders per day and p equals the fare is Rs.

(a) Determine the fare which should be charged in order to maximize daily bus fare revenue.

(b) What is the expected maximum revenue?

© How many riders per day are expected under this fare?

Q.7 Differentiate between the following terms:

(i) Constants and parameters.

(ii) Square matrix and column matrix.

(iii)Exponential function and logarithmic function.

(iv)Implied function and Homogenous function.

(v)Behavioral equations and definitional equations.