M.A (PREVIOUS) EXTERNAL ANNUAL EXAMINATION -2004
"ECONOMICS" PAPER – "V-C".
(MATHEMATICAL ECONOMICS).

Time allowed: Three Hours **Max.Marks:100**

Instructions: 1) Attempt any FIVE questions.
2) All question carry equal marks.

1. A) what is the difference between function and relation?

b) Find equilibrium price and quantity for the following supply and demand Functions of goods x and y.

(i) $Qdx = 410 - 5px - py$
$Qsx = -60 + 3px$

(ii) $Qdy = 295 - px - 3py$
$Qsy = -120 + 3py$

Also tell hat type of goods x and yare?

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2. A) Find Y and C for the following functions

$Y = C + 10 + G0$
$C = 25 + 6y1/2$

Where $I_o = 16$, $G_o = 14$.

b) Use inverse matrix method to find out the equilibrium value for the following model.

$5p_1 - 2p_2 = 15$
$-p_1 + 8p_2 = 16$

3. A) Explain the relationship between Marginal Cost and Average Cost theoretically and mathematically. C = C (Q).

b) Given the Average Cost function:

$AC = Q^2 - 4Q + 214$

Find the Marginal Cost (MC) function.

Is the given function more appropriate as a long-run of Short-run function? Why?

4. Let the Revenue Function R (Q) and Cost Function C(Q) be:

$R(Q) = 1200Q - 2Q^2$
$C(Q) = Q^3 - 61.25Q^2 + 1528.5Q + 2000$

Find the profit maximization output. Also use total approach to show profit Maximization output graphically.

5. A) If the value of rice grows according to the functions $V = Ke\sqrt[2]{1}$

How ling the dealer should take before selling the rice to maximize value.

b) Find the relative extremum of Average cost function

$AC = f(Q) = Q^2 - 5Q + 8$

6. A) Define and explain the Cob-Web model.

b) Find the inter temporal equilibrium price and determine whether equilibrium is stable?

(i) $Qdt = 22 - 3p_1$ $Qst = -2 + p_1 - 1$
(ii) $Qdt = 19 - 6p_1$ $Qst = 6p_1 - 1 - 5$.

7-a) given the function $Qd = K/p^n$ where K and n are positive constants, find the point elasticity of demand (Ed).

b) Given y = f(x) show that the derivative $d(10g_b\ y) / d\ (10g_b\ x)$ also measure the point elasticity.

c) Find dn/dx from $Y = x^2e^{kn-c}$