RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SECOND SEMESTER EXAMINATION, SEPTEMBER 2020

FIRST YEAR [BATCH 2019-22]

Date : 25/09/2020

ECONOMICS (Honours)

Time : 11.00 am – 3.00 pm

Paper : III [CC3] & IV [CC4]

Full Marks : 25+25

Paper : III [CC3]

Answer **all the three** questions from Question Nos. 1 – 3 : [3 ×5]

1. Because industry X is characterized by perfect competition, every firm in the industry is earning zero economic profit. If the product price falls, no firms can survive. Do you agree or disagree? Discuss. [5]

2. Why is the firm's demand curve flatter than the total market demand curve in monopolistic competition? Suppose a monopolistically competitive firm is making a profit in the short run. What will happen to its demand curve in the long run? [5]

3. Discuss briefly equilibrium outcome under Bertrand model with homogeneous products in an oligopoly market. [5]

Answer **any one** question from Question Nos. 4 & 5 [1×10]

4. a) A sales tax of $1 per unit of output is placed on a particular firm whose product sellsfor $5 in a competitive industry with many firms.

   i) How will this tax affect the cost curves for the firm?

   ii) What will happen to the firm's price, output, and profit?

   iii) Will there be entry or exit in the industry? [2 + 2 +1]

   b) Discuss in detail the long run supply curve for a constant cost industry under perfectly competitive market condition. [5]

5. a) Suppose a profit-maximizing monopolist is producing 800 units of output and ischarging a price of $40 per unit.

   i) If the elasticity of demand for the product is –2, find the marginal cost of the last unit produced.

   ii) Suppose that the average cost of the last unit produced is $15 and the firm's fixedcost is $2000. Find the firm's profit. [2.5+2.5]

   b) Give some examples of third-degree price discrimination. Can third-degree pricediscrimination be effective if the different groups of consumers have different levels ofdemand but the same price elasticities? [5]

Paper : IV [CC4]

Answer **all the three** questions from 6 – 8 : [3×5]

6. Find out the nature of the following function (whether convex or concave or neither):

   $y = (0.5x_1^2 + 0.5x_2^2)^{1/2}$ (5)

7. Consider the following equation system:

$$Q_{dt} = 21 - 2P_t$$

$$Q_{st} = -3 + 6P_t$$

$$P_{t+1} = P_t - 0.3(Q_{dt} - Q_{st})$$

Find the time path of P_t (5)

8. Given the input matrix and the final demand vectors:

$$A=\begin{bmatrix} .05 & .25 & .34 \\ .33 & .10 & .12 \\ .19 & .38 & 0 \end{bmatrix} \text{ and } d=\begin{bmatrix} 1800 \\ 200 \\ 900 \end{bmatrix}$$

a) Explain the economic meaning of the elements 0 and 200

b) Explain the economic meaning of the third column sum (2.5+2.5)

Answer **any one** question from Question Nos. 9 & 10: (1×10)

9. Assume the demand and supply functions be

$$Q_d = \alpha - \beta P - \eta \, {}^{dP}/_{dt}$$

$$Q_s = -\gamma + \delta P \qquad (\alpha, \beta, \gamma, \delta > 0)$$

Assuming the rate of change of price over time is directly proportional to excess demand, find the time path of price. What restriction should be imposed on η to make the path dynamically stable? (7+3)

10. Given the utility function U=(x+2)(y+1), the prices of x,y and the money income be 4, 6 and 130 respectively:

i) Find the Lagrangian function
ii) Find the optimal purchase of x and y
ii) Is the second order condition for utility maximization satisfied?
iv) From the information obtained in (ii) find the own price and cross price elasticities of x and y if possible. (1+3+3+3)

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