UNIVERSITY OF COLOMBO – SRI LANKA

DEPARTMENT OF ECONOMICS

2nd Year Special Degree Examination (Economics) – 2017

ECN 2119: Microeconomics

Time Allowed: Three (02) hours

Answer Four (04) questions only

Each question carries equal marks

Calculators may be used

Q1.

Select any five (05) of the following, and state whether these statements are true or false, and illustrate your answer using appropriate diagrams and/or equations.

i. An isoquant shows the different combinations of labor (L) and capital (K) with which a firm can produce different quantities of output. *(05 marks)*

ii. Price control is always good for a society. *(05 marks)*

iii. Firms in perfectly completive market can earn supper profits all the time. (05 marks)

iv. Relationship between quantity of demand and consumers' money income must always be positive. *(05 marks)*

v. A monopolist always produces an output at which the price elasticity of demand greater than one. (05 marks)

vi. Economic profits would be smaller than accounting profits and sometimes might be negative. *(05 marks)*

vii. There is no relationship between a firm long run average cost curve (LAC) and its short run average cost curve (SAC) *(05 marks)*

viii. Monopolists use the second degree price discrimination for bulk-selling (05 marks)

(Total 25 marks)

Q2: Consider the Cobb-Douglas utility function, $u_i(x, y) = X\ Y$ for a rational consumer

i. If $P_X = \$1$, $P_Y = \$2$, and money income (M) = \$20 per week, find the utility maximizing consumption bundle. (06 marks)

ii. If money income increased by \$10, find the utility maximizing consumption bundle (06 marks)

iii. Afterward, if the government imposes 100% taxes on good X, find the utility maximizing consumption bundle (06 marks)

iv. Using a suitable chart, interpret the above results (i. ii, and iii) (07 marks)

(Total 25 marks)

Q3. A monopolist sells in two markets: $P_1(X_1)=100-X_1$ and $P_2(X_2)=80-X_2$. Calculate the profit-maximizing quantities, prices, revenues, costs and the profits;

i. If the cost function is given by $C(X)=10X$. (05 marks)

ii. What happens if price discrimination between the two markets is not possible anymore? Consider $C(X) = 10X$. (05 marks)

iii. If a monopolist faced a demand function given by $Q = 10 - P$

(a) What would be the TR if the monopolist practiced first-degree price discrimination? (05 marks)

(b) If the monopolist practiced the first-degree price discrimination, how much the consumers' surplus would the monopolist take? (05 marks)

(c) If the monopolist sold the first 2 units of the commodity at a price of \$8 per unit and the next 2 units at a price of \$6 per unit, how much of the consumers' surplus would be the monopolist take? (05 marks)

(Total 25 marks)

Q4.

i. Derive the first-order and second-order conditions for the output that a perfectly competitive firm must produce in order to maximize its profit. (09 marks)

ii. Explain how realistic the prefect competitive market model is in the information age. (08 marks)

iii. *In perfect competition, consumers pay the most efficient price.* Do you agree? Explain your answer *(08 marks)*

(Total 25 marks)

Q5.

i. What are the different types of market organization usually identified by economists? Briefly explain each market. (10 marks)

ii. Suppose that in the perfectly competitive market, the market supply function of X is $X_S = 40 + 2.50_X$, and the market demand is $X_d = 70 - 5P_X$,

a. Find the equilibrium price and the equilibrium quantity. (04 marks)

b. If the government imposes a price celling at \$ 5, find new demand and supply. (04 marks)

c. Identify the consequences of such a price celling strategy (07 marks)

(Total 25 marks)

Q6. Define the following concepts

i. Nash equilibrium

ii. MRS

iii. Giffen paradox

iv. Kinked demand curve model

v. Slutsky substitution effects

(Total 25 marks)

Q7. i. Explain how the concept of the prisoners' dilemma can be used to analyze price in oligopoly market. (08 marks)

ii. What is the incentive for the firms in oligopoly market to form cartels, and why do the firms tend to cheat on the cartel. Explain your answer. (10 marks)

iii. What is the difference between the following two concepts (a) Zero-sum game and (b) non-zero-sum game? (07 marks)

(Total 25 marks)

Q8. i. Given the Cobb-Douglas production function, $Q = 4L^{0.8}K^{0.5}$, derive the following functions.

a. MP_L and MP_K (03 marks)

b. AP_L and AP_K (03 marks)

c. MRTS (02 marks)

d. If L = 5 and K = 2, find MRTS (03 marks)

c. Estimate output elasticity (03 marks)

e. Does this production function exhibit Constant Return to Scale. Increasing Return to Scale, or Decreasing Return to Scale. Justify your answer. (03 marks)

ii. If the production function is q = 2LK and let w = $ 5, r = $10, and C = 100, find the optimal combination of L and K. Graphically illustrate your answer. (08 marks)

(Total 25 marks)
