University of Ruhuna
Master of Arts in Economics
1st Semester Examination - September 2017
MAE 5100 - Micro Economic Theory

(Answer **four (04)** Questions only, selecting two (02) questions **from each section.**)

Time: 3 Hours

Part A

01. Nimal purchases two goods, food and clothing. He has a diminishing marginal rate of substitution of food for clothing. Let x denote the amount of food consumed and y the amount of clothing. Suppose the price of food increases from P_{x1} to P_{x2}. On a clearly labeled graph, illustrate the income and substitution effects of the price change on the consumption of food. Do so for each of the following cases:
    (a) Case 1: food is normal good. **(03 marks)**
    (b) Case 2: The income elasticity of demand for food is zero. **(04 marks)**
    (c) Case 3: Food is an inferior good, but not a Giffen good. **(04 marks)**
    (d) Case 4: Food is a Giffen good. **(04 marks)**

02. For a Cobb-Douglas production function,
    (a) write its formula in terms of L and K, α and β, and indicate the economic meaning of each component of the formula. **(03 marks)**
    (b) What are the main properties and limitations of Cobb-Douglas production function? **(04 marks)**
    (c) Sketch the typical TP_L, AP_L, and MP_L curves. **(04 marks)**
    (d) If $\alpha = 1.5$ and $\beta = 0.5$, sketch the expansion path with isoquants Q = 100 and Q = 400. **(04 marks)**

03. The Nitrate division of a fertilizer company finds from statistical studies that its short run total cost function for producing nitrates is S-shaped, and is very similar to that postulated by economic theory. The total cost function is in the form

    $TC = 300 + 50Q - 10Q^2 + Q^3$, where Q is tones per hour of nitrate produced.

    (a) Write down the value of fixed costs (FC) and the expressions for the average total cost (ATC), total variable cost (TVC), average variable cost (AVC), and marginal cost (MC) functions. **(05 marks)**
    (b) Show that the AVC curve is U-shaped and that the MC curve will intersect and that the AVC curve at the lowest point of the latter. **(05 marks)**
    (c) What is the tonnage of nitrates per hour that should be produced to minimize AVC? What will be the average variable cost per metric tonne of nitrates at this output? **(05 marks)**

04. Compare the efficiency implications of long run equilibria under different forms of market structures, with respect to (a) total profits, (b) the point of production on the LAC curve, (c) resource allocation efficiency and (d) sales promotion. **(15 marks)**

Part B

05. Explain the following statements using appropriate diagrams and examples when they are relevant.

(a) "Although an ordinary market supply curve is upward rising from left to right, the long-run supply curve of a decreasing cost industry in a perfectly competitive market structure is downward sloping from left to right". **(05 marks)**

(b) "Price discrimination is harmful to the consumer; but there are instances where the price discrimination beneficial to the consumer". **(05 marks)**

(c) "The long-run equilibrium of a monopolistically competitive firm does not reflect economic efficiency although at that point, its price equals to the average total cost". **(05 marks)**

06: (i) What is meant by a 'zero-sum game'? Using a hypothetical example, explain how two firms choose their optimum strategies when they compete for a larger market share. **(05 marks)**

(ii) A and B are two manufacturing firms of cigarettes and they face a marketing strategy choice between whether to advertise or not to advertise their products. The expected profits for the two firms under their advertise/don't advertise decisions is given in the matrix below:

		FIRM A	
		Don't advertise	Advertise
	Don't advertise	Π_A: 500	Π_A: 750
FIRM B		Π_B: 400	Π_B: 0
	Advertise	Π_A: 0	Π_A: 300
		Π_B: 300	Π_B: 200

Explain whether both firms have a dominant strategy or a Nash equilibrium.

(05 marks)

(iii) "Kinked-demand curve analysis confirms that there is a price rigidity in oligopolistic industries." Explain this statement referring to the factors causing a kinked-demand curve. **(05 marks)**

07. (i) Using a diagram explain a situation when the entire earning of a factor of production comprises of an economic rent. **(05 marks)**

(ii) "Differential rent is due to differences in fertility of land". Explain using a hypothetical example. **(04 marks)**

(iii) "Imperfect competition in the product market results in unfair wage rates, while imperfect competition in the labour market aggravates the unfairness of wage rates" Explain this statement.

(06 marks)

08. (i) Define 'market failure'. **(04 marks)**

(ii) Explain how the positive externality in consumption causes market failure and describe the measures that can be taken by the government to correct this situation. **(05 marks)**

(iii) Describe how the Pareto optimum is achieved in consumption and production under general equilibrium analysis. **(06 marks)**

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