MANAGERIAL ECONOMICS TEST 3

Date: 23/05/2014 Time: 1 hour Lecturer: K. Kavezeri Marks: 40

INSTRUCTIONS TO CANDIDATES
• Answer all questions

QUESTION 1 [17 Marks]

1. The Juice Shop sells iced soft drinks. Management has found that demand is well described by the equation: \( Q = 1,000 - 240P + 80P_c \), where \( Q \) denotes the number of drinks sold per day, \( P \) is the drink’s price, and \( P_c \) is the price of drinks at a nearby café.
   a) How many drinks will be sold if \( P = \$1.50 \) and \( P_c = \$1.20 \)? [3]
   b) Write down the equation for the firm’s demand curve for \( P_c = \$1.20 \). [2]
   c) If the other café’s price increases to \( \$1.50 \), what is the effect on Juice Shop’s demand curve? [3]

2. What would you expect to happen to a firm’s price elasticity of demand if additional competitors enter the market and achieve significant market shares? Explain briefly. [3]

3. Suppose that a firm is selling a good with a marginal cost of \( \$35 \). Management estimates demand elasticity to be -2. What is the appropriate price to set in order to maximize profit? [3]

4. Will a profit-maximizing firm typically sell a good at a price that is in the inelastic portion of a demand curve? Why or why not? [3]

QUESTION 2 [18 Marks]

1. A firm has carefully measured its production function, and thinks that it can be approximated by: \( Q = K^{0.55}L^{0.55} \), where \( Q \) = units of output, \( K \) = units of capital, and \( L \) = units of labor.
   a) What is the output elasticity in this case? [1]
   b) What sort of returns to scale does the firm face? Explain. [2]

2. The Okahao Agricultural College provides tertiary education services with the help of lecturers (L) and tutors (T). The output of the college depends on the number of lecturers and tutors employed according to the function:
   \[ Q = 40L - L^2 + 24T - 0.5T^2 \]
   Where \( Q \) is output; \( L \) is the number of lecturers and \( T \) is the number of tutors employed.

   The monthly salary of a lecturer is \( \$8,000 \) and that of a tutor is \( \$4,000 \). If the college has set aside \( \$52,000 \) per month for the total combined wages of lecturers and tutors, how many lectures and tutors should the college employ? [15]
**QUESTION 3**  
**[5 Marks]**

1. Briefly describe the tit-for-tat strategy.  

2. Study the payoff table and the assumptions listed below and determine the equilibrium outcome for this game.  

Assume that both students rank the outcomes as follows:

1. A Grade of B and no work is better than
2. A Grade of A and hard work which is better than
3. A Grade of C and not working which is better than
4. A Grade of B and hard work.

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<table>
<thead>
<tr>
<th></th>
<th>Student &quot;Joe&quot;</th>
<th>Work Hard</th>
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</thead>
<tbody>
<tr>
<td>Shirk</td>
<td>Both receive C's; neither works very hard on this assignment</td>
<td>Both receive B's, Joe works hard but Sally does not</td>
</tr>
<tr>
<td>Work Hard</td>
<td>Both receive B's, Sally works hard but Joe does not</td>
<td>Both receive A's; both work very hard on this assignment</td>
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</tbody>
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**THE END**