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**ECON 1020 – Prices and Market**

Assignment 3 ‘Student Template’

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| **Assessment 3 Cover Sheet**  Prices and Markets | | | | | | |
| Student Name |  | | | | | |
| Student ID |  | | | | | |
| Tutorial Number |  | | | | | |
| Questions attempted (please tick only 5) | Q1☐ | Q2☐ | Q3☐ | Q4☐ | Q5☐ | Q6☐ |

Assessment Declaration

This is an individual piece of assessment. That means it must be your own work and you can’t copy or have someone else complete any part of the work for you.

By submitting this assessment you are declaring that you have read, understood and agree to the content and expectations of the [Assessment declaration.](https://www.rmit.edu.au/students/student-essentials/assessment-and-exams/assessment/assessment-declaration)

**Signature (take a picture of signature and paste here)**

**[Note: Delete all the text of the questions and instructions given in square brackets and simply retain question numbers and subparts numbers with each question while submitting your final document. You should also delete the text of question not attempted, only retaining its question number. Read the instructions document (available on canvas) carefully.]**

Assessment Task 3: Microeconomic Case Analyses & Problem solving

***[****This assessment is based on topics covered in week 1 to week 10. To successfully complete the assignment, answer any FIVE of the following SIX questions. Each question is worth a total of 10 marks. If more than five questions are answered, marks will be awarded for the first five answers only.*

Follow the instructions and word limit while answering each of the questions and their sub-parts.**]**

**Question 1**

**[**McDonald’s, a big burger joint, is charging $6 for its very famous Big Mac hamburger and selling around 20 million Big Mac in a year in Australia.**]**

1. **[**Suppose Mcdonald’s increases the price of its Big Mac to $6.50. Consequently, quantity sold of the Big Mac falls to 17 million. How much revenue will McDonald’s gain? What can you infer about the price elasticity of demand (PED) for McDonald’s Big Mac? Assume in an alternative scenario, the increase in the price of Big Mac to $ 6.5 reduces its quantity sold to 19 million. How much revenue will McDonald’s gain now? What can you conclude about the PED now? **(4 Marks)]**
2. **[**Given the two scenarios presented in part a, which one do you think is more likely and why? Present evidence in 100 words or less to support your prediction. **(2 marks)]**
3. **[**Suppose Mcdonals’s Big Mac and movie tickets have negative cross price elasticity of - 0.8. What does this number tell us on the relationship between the Big Mac and movie tickets? Suppose, The Village Cinemas, Australia’s leading cinema exhibitor, decides to increase the price of its movie tickets by 10%. How will this development affect McDonald’s pricing decisions as indicated in part (a)? Discuss both the scenarios (as presented in part (a)) in 200 or less words. (**4 marks)]**

**Answer**

**Question 2**

**[**Suppose ‘Car Today’ is the only firm selling cars in a small, rural town in Victoria. Assume that people in the town do not want to leave the town to buy cars. Also assume that there is a constant marginal cost for ‘Car Today’.**]**

1. **[**What type of market structure do you think ‘Car Today’ belongs to? Why? Explain in 100 words or less. **(2 marks)]**
2. **[**Draw a graph for Car Today that shows the firm carrying out perfect price discrimination (first degree). Label the producer surplus, consumer surplus, and deadweight loss in the graph. No Explanation required. **(4 Marks)]**
3. **[**Now suppose the city council hears of Car Today’ practices and outlaws price discrimination (and assume they can successfully enforce it). Draw a NEW GRAPH showing what Car Today will do to maximize profits. Label the producer surplus, consumer surplus, and deadweight loss in the graph. No explanation required. **(4 Marks)]**

**Answer**

**Question 3**

**[**The drainage of waste products from the chemical factory, Teesta Chemicals, situated along the banks of the Sipra River has led to the formation of a dead zone in the river that cannot support aquatic life.**]**

1. **[**Without any government intervention, will the Teesta Chemical produce a socially optimal quantity? Why or why not? Explain your answer in 200 words or less with the help of suitable diagrams. **(5 marks)]**
2. **[**Does Teesta Chemical impose a deadweight loss on the society? Explain in 100 words or less. Draw the diagram to show the deadweight loss to the society. **(3 marks)]**
3. **[**How can a government intervene to improve upon the outcome from society’s point of view? Explain in 100 words or less. Diagram not needed. **(2 marks)]**

**Answer**

**Question 4**

**[**The soft drink industry is dominated by TCCC and PSC. The market is worth $6 billion. Each firm can decide whether to advertise, but advertising costs $1 billion to any firm undertaking it. Moreover, advertising will create only negligible new demand as the market is already saturated. So, for the purpose of this question, assume that the market remains at $6 billion regardless of advertising.

If one firm advertises and the other does not, then the former captures the whole market. If both firms advertise, then TCCC captures 60% of the market and PSC captures 40% of the market, but the advertising must be paid for. If neither firm advertises, then the market is again split 60:40, with 60% going to TCCC and 40% to PSC.**]**

1. **[**Draw the payoff matrix for this game where each player’s payoff is equal to the value of market it captures less the cost of advertisement. **(4 Marks).]**
2. **[**Do any of the firms have dominant strategies? If so, what are they? Is there a dominant strategy equilibrium? If so, what is it? Is there any Nash Equilibrium (equilibria) in this game? If so, what is that? Provide brief and to the point answer. Extra writing will not gain more marks. **(4 Marks)]**
3. **[**The dental lobby campaigns to ban soft drink advertising because of adverse effects of these drinks on dental hygiene. How much should TCCC and PSC spend in lobbying efforts to defeat such moves to introduce a ban? Explain your answer in 100 words or less. (Hint: Use the pay-off matrix from part a to determine your answer) **(2 Marks)]**

**Answer**

**Question 5**

**[**There are 100 workers in Pakistan, and each worker can produce either 10 shirts or 2 hats. There are 200 workers in the Bangladesh, and each can produce 4 shirts or 10 hats.**]**

1. **[**Draw the Production Possibility Curves (PPC) for each country. What is the opportunity cost of shirts in Pakistan? What is the opportunity cost of shirts in Bangladesh? Which country has a comparative advantage in the production of shirts? **(5 marks).]**
2. **[**In the absence of trade, if Pakistan consumes 600 shirts, how many hats can it consume? In the absence of trade, if Bangladesh consumes 500 hats, how many shirts can it consume? **(2 marks)]**
3. **[**Someone now proposes that Bangladesh and Pakistan enter into a trade agreement. Under this agreement, the Bangladesh will give Pakistan 500 hats and Pakistan will give Bangladesh 200 shirts. If Pakistan continues to consume 600 shirts, how many hats will it be able to consume under this proposal? If Bangladesh continues to consume 500 hats, how many shirts will it be able to consume under this proposal? Should Pakistan accept this proposal? Should Bangladesh accept this proposal? **(3 marks)]**

**Answer**

**Question 6**

**[**A new drug called ‘LowG’, taken together with any food, reduces the glycemic index (a measure of the impact of the food on blood sugar) by 50%. Annual demand for this new medication can be described by the following table:**]**

|  |  |
| --- | --- |
| Quantity (millions of milligrams) | Price ($) |
| 0 | 1000 |
| 200 | 900 |
| 400 | 800 |
| 600 | 700 |
| 800 | 600 |
| 1000 | 500 |
| 1200 | 400 |
| 1400 | 300 |
| 1600 | 200 |
| 1800 | 100 |
| 2000 | 0 |

1. **[**Rache, a pharmaceutical company, holds the patent on LowG and therefore is the only legal producer of the drug for the next 15 years. Calculate total revenue (TR) and marginal revenue (MR) for Rache at each price. **(2 marks)]**
2. **[**Suppose for Rache, production of this drug involves an annual fixed cost of $200,000 and a (constant) marginal cost of $300 per million milligrams of the drug. Find the profit maximizing quantity produced and the price for Rache. Show how you calculated this equilibrium and demonstrate it graphically. **(5 marks)]**
3. **[**Suppose that the cost of seeking a patent is equal to $0.5 million, and that a patent lasts for 15 years. Is it worthwhile for Rache to seek a patent to produce this medication, if it knows its costs and the demand information (as provided above) beforehand? Assume constant macroeconomic conditions for the next 15 years for simplicity. Explain your answer. **(3 marks)]**

**Answer**