Industrial Organization and Antitrust Policy
Exam 4
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Name: ____

Question:	1	2	3	4	5	6	7	8	9	10	Total
Points:	25	5	20	5	5	5	5	5	20	5	100
Bonus Points:	5	0	10	0	0	0	0	0	0	0	15
Score:											

1. You are one firm serving two different types of consumers, Type A and Type B. The market demand curves are as follows:

$$Q_A = 120 - .5P_A$$
$$Q_B = 360 - 2P_B$$

Your total cost function is as follows: $TC = 300 + .5(Q_A + Q_B)^2$ You decide you are going to practice 3$^{\text{rd}}$ degree price discrimination, charging two different prices (and selling two different quantities) in your two markets.

(a) (5 points) The necessary conditions for this firm to be able to engage in price discrimination don't include:

A. The firm has to have the ability to restrict output.
B. Consumers must have some identifiable characteristic that is reflective of their sensitivity to price changes.
C. The goods ought to be heterogeneous.
D. Consumers may not be able to engage in arbitrage.

(b) (5 points) The aggregate output produced by the firm is

A. 246.6 B. 106.6 C. 206.6 D. None of those.

(c) (5 points) The output for the firm on market A is

A. 73.3 B. 33.3 C. 23.3 D. 106.6

(d) (5 points (bonus)) The price charged by the firm on market B is

A. Smaller than on market A. B. 173.3 C. 123.3 D. 73.3

(e) (5 points) The profit for the firm is approximately

A. 10,300 \$ B. 10,600\$ C. 11,000\$ D. 5,000\$

(f) (5 points) What does this total cost function say about the nature of the cost complementarity of these goods.

A. Production function is linear.
B. You can always combine inputs into outputs on the same manner.
C. Augmenting production of one good increases ATC of another
D. Increasing marginal productivity.

2. (5 points) Examples of 3$^{\text{rd}}$ degree price discrimination don't include:

A. Senior citizen discount at the movies
B. Grocery coupons
C. Children haircuts
D. Charging a higher price for ice cream during the summer and a lower price in the winter

3. Once upon a time there was a market in a kingdom far far away, in which firms competed with each other by producing slightly differentiated goods. The demand for each of them are expressed on the demand functions below.

$$x_1 = 100 - p_1 + .5p_2 + .5p_3$$
$$x_2 = 100 - p_2 + .5p_1 + .5p_3$$
$$x_3 = 100 - p_3 + .5p_2 + .5p_1$$

Each firm's costs are $TC(x_i) = 5x_i$.

Suppose firms 1 and 2 would like to merge and constitute firm $M = 1 \oplus 2$. According to the Hart-Scott-Rodino Act (Clayton §7a) the proposed merger is substantial and therefore must submit information to the Federal Trade Commission.

Upon initial discovery, the FTC realized products were heterogeneous but somewhat substitutable, making market-definition and any market-share based analysis rather difficult, potentially under-estimating competitive effects of set merger. The FTC then decided to approach the analysis using UPP, a technique recently added to the antitrust methodology.[1]

(a) (5 points) We generally expect $|{}^{\partial x_i}/_{\partial p_i}| > |{}^{\partial x_i}/_{\partial p_j}| \quad i \neq j$ because:

A. Products are homogeneous
B. The firm wants to make price as high as possible
C. Consumers respond more to changes in own good prices
D. Demand is inelastic

(b) (5 points (bonus)) What is the HHI in this market?

A. 10,000 B. 2,500 C. 1,500 D. 3,333

(c) (5 points (bonus)) What is the Δ HHI resulting from this merger?

A. 2,222 B. 2,500 C. 1,200 D. 666.66

(d) (5 points) The Diversion ratio measures

A. Demand elasticity
B. Market concentration
C. Percentage of lost sales from one good recaptured by another good
D. Percentage to which prices will rise post merger.

(e) (5 points) Pre-merger Nash Equilibrium in this market:

A. 105
B. $\{(105, 105, 105)\}$
C. 100 for every firm
D. Not enough info to compute.

(f) (5 points) What is the upward pricing pressure for product 1 in this market?

A. 50 B. 66.66 C. 33.33 D. 0

[1] UPP was introduced to merger analysis at the DOJ and FTC Horizontal Merger Guidelines (2010)

4. (5 points) You've been hired as an economist for a natural gas company, and part of your job is to testify before regulators like FERC (the Federal Energy Regulatory Commission). You are standing in front of the panel at FERC and the judge says this to you: *"Every form of price discrimination harms customers. Why should we approve your pricing plan when it harms customers?"* You have 3 minutes to respond. What is necessary to include in your argument?

   A. Price discrimination allows firms to make a distribution of goods that is fair.
   B. Price discrimination can allow firms to subsidize marginal consumers with the revenue from others.
   C. Price discrimination protects small businesses.
   D. Price discrimination diminishes the power of big corporations.

5. (5 points) The piece of legislation in the United States that regulates over price discrimination is the Robson-Patman Act (1936). The following situation is a potential violation:

   A. Apple sells Apple watches 3 for either 339$ or 389$, depending on whether the consumer wants Wi-Fi or Cellular. This way, despite being the same product, consumers will pay different prices.
   B. Dillons sells Kroger and Kellog's cereals for different prices, despite of the fact that they have the same ingredients and packaging is the same but the color on the outside.
   C. An advocacy office purchases papers in bulk from huge office department stores. After consulting with Staples, they were offered 10$ per pack of paper. Going to Office Depot, they were offered 11$. The advocacy office then told Office Depot about Staple's offer, which then offered 9$.
   D. Amazon allows business to create a business account with deals to purchase electronics at a discounted rate that isn't available to individuals.

6. (5 points) Offering volume discounts is a type of

   A. First Degree Price Discrimination
   B. Second Degree Price Discrimination
   C. Third Degree Price Discrimination
   D. Consumer Surplus

7. (5 points) When a movie theater offers students a discount upon presentation of a student ID, this is because the theater believes that students:

   A. Buy more concessions
   B. Have a more elastic demand
   C. Have a more inelastic demand
   D. Get more enjoyment out of movies

8. (5 points) Stores such as Sam's Club force you to buy a membership in order to have access to the low prices offered. This is an example of:

   A. Extortion
   B. Two part Tariff
   C. Cost Plus Pricing
   D. Predatory Pricing

9. The firm is currently selling two products, which demand functions are as follows:

$$Q_A = 150 - P_A$$
$$Q_B = 150 - .75P_B$$

(a) (5 points) The price elasticity of these products seem to suggest:

A. Good A has fewer substitutes than good B.
B. Good A is likely a more superfluous good than B.
C. Good A and good B are substitutes in the eyes of the consumer.
D. Good A and good B are complements in the eyes of the consumer.

(b) (5 points) In order to derive this cost plus pricing model in terms of demand elasticity, a few assumption were necessary. Which of the following isn't a necessary assumption for this model to work.

A. Constant $MC = AC$
B. Firm has market power
C. Linear demand
D. There are barriers to entry

(c) (5 points) You have to mark up the products to cover unexpected increase in overhead costs. You anticipated selling 50 of product A and 60 of Product B

A. The markup for product A is 200%
B. The markup for B is 50%
C. The markup for B is approximately twice the markup for A.
D. The markup for B is 200% higher than markup for A.

(d) (5 points) Cost Plus Pricing determines markup in such a way that...

A. The bigger the elasticity, the higher the markup
B. The smaller the elasticity, the higher the markup
C. Markup is the inverse of the elasticity
D. Uses cross-price elasticity of demand

10. (5 points) A type of price discrimination in which price reflects exactly willingness to pay.

A. First Degree
B. Second Degree
C. Third Degree
D. Cost Plus Pricing