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| Regulation & Antitrust Policy (Econ 180) | Signature: |  |
| Drake University, Spring 2011  William M. Boal | Printed name: |  |

**QUIZ #13 VERSION A**

**"Regulation and Deregulation of Telecommunications"**

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Mobile phones or other wireless devices are NOT permitted. Points will be subtracted for illegible writing or incorrect rounding. Point values for each question are noted in brackets.

**I. Multiple choice:**  Circle the one best answer to each question. [2 pts each: 10 pts total]

(1) AT&T’s tariffs long prohibited customers from attaching equipment made by other manufacturers. This prohibition was first successfully challenged in the

1. Modification of Final Judgment, effective 1984.
2. Telecommunications Act of 1996.
3. Hush-a-Phone case of 1956.
4. MCI case of 1969.

(2) "Cream-skimming" refers to entry by competitors into markets whose prices have been set by regulators

1. below average cost.
2. above average cost.
3. below average incremental cost.
4. above average incremental cost.

(3) The DOJ Antitrust Division filed suit against AT&T in 1974, accusing AT&T of

1. monopolizing long-distance telecommunications markets by making it difficult for competitors to connect to the local network.
2. violating the 1956 Final Judgment by entering unregulated markets, such as computers.
3. predatory pricing.
4. price-fixing.
5. All of the above.

(4) The 1982 consent decree (or "Modification of Final Judgment") required AT&T to divest its

1. long-distance operations.
2. equipment manufacturing operation.
3. local phone companies.
4. research arm, Bell Laboratories.
5. All of the above.

(5) The Telecommunications Act of 1996 succeeded in encouraging substantial entry into

1. cable TV markets.
2. local telephone service markets.
3. the long distance telephone service market.
4. All of the above.

**II. Problems:** Insert your answer to each question below in the box provided. Use margins and graphs for scratch work⎯only the answers in the boxes will be graded. Work carefully⎯partial credit is not normally given for questions in this section.

(1) [Transformation of natural monopoly: 32 pts] The graph below shows industry demand and average cost curves for a typical individual firm.

Suppose the average cost curve for a typical firm is given by "Old avg cost" and demand is given by "Old demand."

|  |  |
| --- | --- |
| a. What is the minimum efficient scale? | million |

b. [8 pts] Is this industry a natural monopoly? Why or why not?

Suppose the average cost curve for a typical firm falls to "New avg cost" as a result of advancing technology, and demand shifts to "New demand" as a result of rising incomes.

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| --- | --- |
| c. What is now the minimum efficient scale? | million |
| d. Is this industry now a natural monopoly? Answer *yes* or *no*. |  |
| e. If the firms in this industry engage in price competition and there is free entry and exit, what will be the equilibrium market price? | $ |
| f. What will be the equilibrium market quantity under price competition? | million |
| g. What is the maximum number of firms that this industry can support under price competition? | firms |

(2) [Multiproduct cost functions: 32 pts] Acme Telecom produces two products: X and Y. Let QX denote the quantity of product X, and let QY denote the quantity of product Y. The total cost C(QX,QY) of producing the products at various levels of output are given by the following table.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| C(QX,QY) |  | QY | | | | |
|  |  | 0 | 10 | 20 | 30 | 40 |
|  | 0 | $0 | $95 | $268 | $493 | $759 |
|  | 10 | $63 | $138 | $303 | $522 | $782 |
| QX | 20 | $179 | $245 | $407 | $623 | $881 |
|  | 30 | $329 | $389 | $548 | $762 | $1,018 |
|  | 40 | $506 | $561 | $718 | $930 | $1,185 |

a. Does Acme Manufacturing enjoy *economies of scope*? Why or why not? Give a numerical example.

b. Compute the *incremental cost* of product X, given that the firm will produce 20 units of product Y, and place your answers in the table below.

c. Compute the *average incremental cost* of product X, given that the firm will produce 20 units of product Y, and place your answers in the table below.

|  |  |  |
| --- | --- | --- |
| QX | IC(QX) given QY=20 | AIC(QX) given QY=20 |
| 10 | $ | $ |
| 20 | $ | $ |
| 30 | $ | $ |
| 40 | $ | $ |

d. Does Acme Telecom enjoy *product-specific* *economies of scale* for product X? Why or why not?

(3) [Cross-subsidization: 20 pts] Suppose that Superior Communications, a regulated firm, operates in two markets with different demand curves, but with the same average cost curve in each market, as shown below.

a. Is Superior Communications a natural monopoly? Why or why not?

Suppose the regulator imposes a price of **$ 9** in both markets.

|  |  |  |
| --- | --- | --- |
|  | Market #1 | Market #2 |
| b. What quantity will be demanded in each market? | million | million |
| c. Will Superior Communications enjoy a *profit* or a *loss* in each market? |  |  |
| d. How much? | $ million | $ million |

Suppose another firm has an average cost curve that is $1 *higher* than Superior Communications' average cost curve shown in the graph above. Further suppose that the regulator permits free entry into both markets.

e. Will the other firm enter market #1, market #2, both markets or neither market? Why?

**III. Challenge question:** Write a one-paragraph essay answering the following question. [8 pts]

1. Has the demand for landline telephone service become *more* price-elastic or *less* price-elastic in the last decade?
2. Why?
3. Landline telephone service is now unregulated, so landline telephone companies can set whatever prices they choose. Will the change in price elasticity give landline telephone companies *more* market power or *less* market power?
4. Why? Assume that market power is measured by the price-cost margin or Lerner index.

[end of quiz]