MIDTERM EXAMINATION

INDUSTRIAL ORGANIZATION AND PUBLIC POLICY
(Economics 640)

Spring 2011 Professor D. Weisman

Instructions: There are two parts to this examination, weighted 40 points and 60 points, respectively. Write legibly and think carefully about your answers. You may find that graphical and/or mathematical analysis will assist you in answering some of these questions.

Part I. (40 Points) Short Answer and Analysis. Answer 4 (and only 4) of the following 6 questions.

1. The CEO of Staples claims that prices will be lower if the FTC approves the merger of his company with Office Depot. Let the inverse demand function be given by $P(Q) = 6 – 4Q$. The pre-merger cost function is given by $C(Q) = 4Q$ and the post-merger cost function is given by $C(Q) = 4\theta Q$, where $\theta \leq 1$. Assume that the competitive outcome prevails pre-merger and the monopoly outcome prevails post-merger. Determine the value(s) of θ that must prevail post-merger in order for the CEO's statement to be credible.

2. Suppose that the demand function is linear, marginal cost is constant, and the deadweight loss from monopoly is equal to 100. According to Judge Richard Posner's theory of rent-seeking behavior, the total social costs of monopoly may range as high as _____?

3. Let the inverse market demand function be given by $P = 20 – (q + Q)$, where q is the output of the competitive fringe and Q is the output of the dominant firm. Suppose the dominant firm's cost function is given by $C(Q) = 2Q$ and the entrant's cost function is given by $C(q) = 4q$. What is the limit level of output, Q^L, and the corresponding limit price, P^L?

4. The market demand function is given by $P = 20 – 1Q + ½ s$, where P is price, Q is quantity and s is an index of service quality. In addition, suppose that $C(Q) = 4Q$. What can you infer about the level of s under a monopoly outcome if consumers are no worse off than they are under a competitive outcome with $s = 8$?

5. Let the inverse demand function be given by $P(Q) = 24 – Q$ and let the cost function be given by $C(Q) = 4Q$. Suppose that this market is controlled by a monopolist. How much would consumers have to bribe the monopolist in order to induce him to price at the competitive level? What is the resultant level of economic welfare? [Assume zero transactions costs.]

6. A firm's demand function is given by $Q = 20 - 2P$. What is the firm's revenue maximizing price and quantity? What is the price elasticity of demand at this price and quantity?

Part II. (60 Points). Problems and Essay. Answer 2 (and only 2) of the following 3 questions.

1. You are an economist with the Justice Department with responsibility for economic analysis of merger activity. Suppose that the government's welfare function is given by $W = \alpha\, CS + (1- \alpha)PS$, where W is social welfare, CS is consumers' surplus, PS is producer's surplus and $\alpha \in [0,1]$. Let the market demand function be given by $Q = 32 - 2P$. Let the pre-merger cost function be given by $C(Q) = 6Q$ and the post-merger cost function be given by $C(Q) = 4Q$. Also assume that the competitive outcome prevails pre-merger and the monopoly outcome prevails post-merger.

a) Compute pre-merger and post-merger CS and PS.

b) Compute pre-merger and post-merger DWL.

c) Illustrate your results graphically.

d) For what values of α is the merger welfare-diminishing?

e) Do you believe that the Justice Department in the current administration is likely to approve this merger? Briefly explain your reasoning.

2. The inverse market demand function is given by $P = 24 - 1(q + Q)$, where P is price, q is fringe output and Q is dominant firm output. The cost function for the dominant firm is given by $C(Q) = 4Q$. The cost function for the fringe firm is given by $C(q) = e + 4q$, where e represents the sunk cost of entry into the market.

a) What is the monopoly level of output for the dominant firm? What is the monopoly price? What is the corresponding level of consumers' surplus?

b) Derive an expression for the output of the fringe firm for any output choice, Q, of the dominant firm.

c) What is the limit level of output for the dominant firm and the corresponding limit price when $e = 0$? Briefly explain the economic intuition for your finding?

d) Suppose that the limit output is the monopoly output and the limit price is the monopoly price that you derived in part a) above. What can you tell me about the magnitude of e? Briefly explain the economic intuition for your finding.

3. Judge Robert Bork has stated that “the only legitimate goal of antitrust law is to maximize consumer [economic] welfare.” In debate on the Senate floor regarding the passage of the Sherman Act, Senator Sherman stated that the purpose of the statute was to outlaw arrangements “designed, or which tend to advance the cost to the consumer.” Are these statements consistent with one another? How might the Chicago School and Harvard School (SCP) views on antitrust be used to frame this discussion? What role, if any, does the distribution of the gains from a merger play in the analysis? In answering this question, you should rely upon your readings, the cases discussed in class and formal economic analysis. [Note: You should anticipate that grading for this question will be demanding yet fair. It may prove helpful to begin by constructing an outline for your answer.]