EXAM 2
May 19, 1999

There are two parts to this exam. Part I is made up of multiple choice problems, and is worth 60 points. Part II is made up of short answer problems, and is worth 40 points.

Be sure to read each question carefully before answering. Do not use any books or notes. You have 65 minutes to complete the full 100 point exam. Be sure to budget your time.

Good Luck!

NAME: _____________________________________________

PART I - MULTIPLE CHOICE PROBLEMS

Read each of the following questions carefully and circle the letter of the one best answer. There are 20 questions in this section, each of which is worth 3 points. Note that diagrams are often helpful in determining the correct answer.

1. A perfectly competitive firm is selling 100 units of output at the market price of $4 per unit. At that level, marginal cost is $5, average variable cost is $3 and average total cost is $6. In order to profit maximize, in the short run this firm should
   a) increase production
   b) increase price
   c) decrease production
   d) shut down

2. A kinked demand curve reflects an assumption that the oligopolistic firm will
   a) set prices without regard to other firms’ prices.
   b) match price reductions of other firms, but not price increases.
   c) match price increases of other firms, but not price reductions.
   d) set different prices for different customers.

3. The number of seats in Foxboro stadium is fixed. The price of a ticket to see the Patriots play football there is higher than the price of a ticket to see the Revolution play soccer there. Therefore, it must be the case that
   a) football games are more expensive to produce than soccer games
   b) demand for each football game must be more than the demand for each soccer game
   c) the supply of soccer games must be less elastic than the supply of football games
   d) the demand for each soccer game must be greater than the demand for each football game

4. If a profit-maximizing firm is a monopsony in a factor market, then
   a) the marginal cost of the factor will be less than the marginal revenue product of the factor.
   b) The marginal cost of the factor will be less than the price of the factor.
   c) The price of the factor will be less than the marginal cost of the factor.
   d) the marginal revenue product of the factor will be less than the marginal cost of the factor.

5. 6 and 7. Suppose that steel is produced in a perfectly competitive decreasing cost industry. Currently the industry is in a short run equilibrium with a price of $950 per ton. Each firm is losing $50 per ton, and minimum average total cost is $975.
5. From the above, we know that for a representative firm, at current output levels
   a) marginal cost is equal to $950
   b) marginal cost is equal to $975
   c) marginal cost is equal to $1000
   d) none of the above

6. From the above, we know that for a representative firm, at current output levels
   a) average total cost is equal to $950
   b) average total cost is equal to $975
   c) average total cost is equal to $1000
   d) none of the above

7. From the above, we can say that in the subsequent long run equilibrium,
   a) price might be equal to $950
   b) price might be equal to $975
   c) price might be equal to $1000
   d) price cannot possibly be any of the above

8. Suppose that the marginal revenue product of a worker in a sweater factory is $6 while that for worker
   in a jacket factory is $5. If these workers have similar skills and are currently being paid their
   marginal revenue product, then
   a) there is no potentially Pareto improvement possible
   b) as long as consumers prefer sweaters to jackets, there is no potentially Pareto improvement possible
   c) increasing the number of workers in the sweater factory will be potentially Pareto improving
   d) increasing the number of workers in the jacket factory will be potentially Pareto improving

9. A perfectly competitive firm is currently operating at its minimum average total cost of $12 and is
   producing 50 thousand units of output. If the market price is $14, then we can be sure
   a) the firm is in long run equilibrium
   b) the firm is in short run equilibrium
   c) both a) and b)
   d) none of the above

10. A profit-maximizing firm is using both capital and labor to produce output. If the price of labor
    decreases, then this firm's demand for capital will
    a) definitely decrease
    b) definitely increase
    c) increase, if the scale (or output) effect is bigger than the substitution effect
    d) decrease, if the scale (or output) effect is bigger than the substitution effect

11. The present discounted value of a given sum of money that will be received sometime in the future
    will increase with both
    a) a higher interest rate and a longer period of time until the payment is received
    b) a lower interest rate and a longer period of time until the payment is received
    c) a higher interest rate and a shorter period of time until the payment is received
    d) a lower interest rate and a shorter period of time until the payment is received

12. Suppose that all firms in the economy are profit-maximizing, and we know that in a certain industry
    market demand is relatively inelastic at current output levels. From this we can conclude that
    a) firms are making positive economic profits
    b) total revenue would increase if output increased
    b) the industry is not monopolized
    d) none of the above
13. A monopolistically competitive firm is currently operating at its minimum average total cost of $4 and is producing 40 thousand units of output. If the market price is $5 and the firm is profit maximizing, then we can be sure that
   a) the firm is not in long run equilibrium
   b) marginal revenue is equal to $5
   c) both a) and b)
   d) none of the above

14. and 15. Currently, a firm is in short run equilibrium, producing 100 units with P=$9, TC=$450 and MR=$4.50. When a long run equilibrium is established, they produce 60 units, with P=$5, TC=$300 and MR=$4.

14. Based on this information, we can be sure of the following
   a) marginal cost in the short run is $9
   b) marginal cost in the long run is $5
   c) minimum short run average total cost is $4.50
   d) all of the above

15. Based on this information, we can be sure of the following
   a) the firm’s cost curves must have fallen in the long run
   b) new firms must have entered the market in the long run
   c) the firm is operating at minimum average total cost in the long run
   d) all of the above

16. A monopolist is currently producing at minimum short run average total cost of $20. If this monopoly firm is currently selling at a price of $20, then
   a) the firm should definitely shut down in the long run.
   b) the firm should expand output to profit maximize and may be able to remain in business in the long run.
   c) the firm should decrease output to profit maximize and may be able to remain in business in the long run.
   d) the firm should not change what it is doing and may remain in business in the long run.

17. A firm is profit maximizing, selling its product for $5 and paying its workers $20. If the marginal product of labor is $5, and the marginal cost of labor is $20, then we can be certain that
   a) this firm is a monopolist in the output market
   b) this firm is a monopsonist in the labor market
   c) both a) and b)
   d) neither a) nor b)

18. and 19. Suppose that potato chips are produced in a perfectly competitive constant cost industry which is currently in long run equilibrium. Suppose that the availability of a new “fat-blocking” diet drug now causes a permanent increase in demand for potato chips.

18. In the short-run industry equilibrium following this increase in demand
   a) The price of potato chips will be higher than it was originally
   b) The profits earned by potato chip producers will be higher than they were originally
   c) The quantity of potato chips produced will be higher than it was originally
   d) all of the above

19. When long-run industry equilibrium is restored following this increase in demand
   a) The price of potato chips will be higher than it was originally
   b) The profits earned by potato chip producers will be higher than they were originally
   c) The quantity of potato chips produced will be higher than it was originally
   d) none of the above
20. Suppose a monopolistically competitive firm is producing 4000 units of output and has total revenues of $20,000. If this is a long run equilibrium, then it must be the case that
   a) marginal cost is $50
   b) minimum average total cost is $50
   c) total cost is $20,000
   d) all of the above

PART II - SHORT ANSWER QUESTIONS

Answer each of the following questions. When explanations are required, try to be brief, but clear. Note the different point values indicated for each of the 3 questions.

1. (10 pts) With the new WalMart in West Leb, K-Mart knows they are competing directly with WalMart, and thus that their profits will depend on what WalMart does, in the following way:

   (payoff in millions of $ of profit) WalMart's Choice
<table>
<thead>
<tr>
<th></th>
<th>High price</th>
<th>Low price</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-Mart’s High price</td>
<td>(8,10)</td>
<td>(7,11)</td>
</tr>
<tr>
<td>Choice Low price</td>
<td>(12,7)</td>
<td>(6,9)</td>
</tr>
</tbody>
</table>

(recall this tells us that K-Mart will get $8 million and WalMart $10 million if K-Mart sets a high price and WalMart does the same):

   a) Does K-Mart have a dominant strategy? Briefly explain your answer.

   b) Does WalMart have a dominant strategy? Briefly explain your answer.

   c) What pricing plan will K-Mart use? What plan will WalMart use? Briefly explain your answer.

Both questions 2 and 3 rely on the following graph, showing the market supply and demand for ‘Star Wars’ Action Figures.

2. (15 pts) Suppose the figures are produced in a perfectly competitive, increasing cost industry that is currently in a short-run equilibrium. In the previous long-run equilibrium, 40 million figures were sold, and in the new long-run equilibrium, 70 million will be sold.
3. (15 pts) Suppose now that Hasbro is the monopoly producer of action figures. For your convenience I have reproduced the market supply and demand curves below.

a) What was price in the previous long-run equilibrium? In the current short-run equilibrium are the firms’ cost curves higher, lower or the same than they were in the previous long-run equilibrium? Are firms making profits? Briefly explain your answer.

b) What will the price be in the new long-run equilibrium? In the current short-run equilibrium are the firms’ cost curves higher, lower or the same than they will be in the new long-run equilibrium? Will firms be making profits in the new long-run equilibrium? Briefly explain your answer.

c) What must have happened to demand to move us away from the old long-run equilibrium? What happened in terms of firms entering or exiting to move us to the new long-run equilibrium?
a) Add Hasbro’s marginal revenue curve to the graph. How many action figures will be sold? At what price? How does this price and quantity compare to the outcome for a perfectly competitive market? Briefly explain how you obtained your answer.

b) On the graph above, clearly label consumer surplus and producer surplus when Hasbro is a monopoly. How does the sum of consumer and producer surplus compare to that for a perfectly competitive market? Briefly explain how you obtained your answer.

c) Suppose that George Lucas has a licensing agreement with Hasbro so that he receives 10 percent of the price of every action figure sold. Assuming that Lucas wants to maximize his revenues from licensing, how many action figures would he like to see Hasbro sell? At what price? Why is or is not this the same as what Hasbro plans to do from part a)?