FINAL EXAMINATION
ECON 200
Spring 2007
Version A

STUDENT'S NAME: ________________________________________________

STUDENT'S IDENTIFICATION NUMBER: ___________________________

DAY AND TIME YOUR SECTION MEETS: _____________________________

BEFORE YOU BEGIN PLEASE MAKE SURE THAT YOUR EXAMINATION HAS BEEN
DUPLICATED AND COLLATED CORRECTLY. THERE SHOULD BE 60 MULTIPLE CHOICE
QUESTIONS. THE EXAM HAS 17 PAGES INCLUDING THIS COVER SHEET.

ANSWER ALL THE PROBLEMS ON THE SCANTRON SHEET.

ENTER THE NUMBER 123456 UNDER "SPECIAL CODES" ON THE SCANTRON SHEET.

BE SURE TO FILL IN YOUR NAME (LAST NAME FIRST) AT THE TOP OF THE SCANTRON
SHEET. FILL IN YOUR STUDENT IDENTIFICATION NUMBER UNDER "IDENTIFICATION
NUMBER" ON THE SCANTRON SHEET.

WRITE YOUR TA'S NAME IN THE UPPER-RIGHT HAND CORNER OF YOUR SCANTRON
SHEET.

University of Maryland Honor Pledge

The University is committed to Academic Integrity, and has a nationally recognized Honor Code,
administered by the Student Honor Council. In an effort to affirm a community of trust, the Student
Honor Council proposed and the University Senate approved Honor Pledge. The University of
Maryland Honor Pledge reads:

"I pledge on my honor that I have not given or received any unauthorized assistance on this
examination (or assignment)."

Please rewrite the exact wording of the pledge, followed by your signature in the space below:

Pledge:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Your Signature: __________________________
Table 1
Use the information for a competitive firm in the table below to answer the following questions.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Total Revenue</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$0</td>
<td>$10</td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
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<td>70</td>
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<tr>
<td>9</td>
<td>81</td>
<td>82</td>
</tr>
</tbody>
</table>

1. Refer to Table 1. At which quantity of output is marginal revenue equal to marginal cost?
   a. 3
   b. 6
   c. 8
   d. 9

2. Refer to Table 1. The maximum profit available to this firm is
   a. $2
   b. $3
   c. $4
   d. $5

3. Refer to Table 1. If the firm finds that its marginal cost is $11, it should
   a. increase production to maximize profit.
   b. increase the price of the product to maximize profit.
   c. advertise to attract additional buyers to maximize profit.
   d. reduce production to increase profit.
**Figure 1**
The figure below illustrates the cost and revenue structure for a monopoly firm.

4. **Refer to Figure 1.** The curve that most likely represents the Marginal Revenue Curve is,
   a. A.
   b. B.
   c. C.
   d. D.

5. **Refer to Figure 1.** At the profit-maximizing level of output,
   a. marginal revenue is equal to \( P_3 \).
   b. marginal cost is equal to \( P_3 \).
   c. average revenue is equal to \( P_3 \).
   d. average total cost is equal to \( P_1 \).

6. **Refer to Figure 1.** A profit-maximizing monopoly's profit is equal to
   a. \( P_3 \times Q_2 \).
   b. \( P_2 \times Q_4 \).
   c. \((P_3 - P_0) \times Q_2\).
   d. \((P_3 - P_0) \times Q_4\).
Table 2

<table>
<thead>
<tr>
<th></th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right</td>
</tr>
<tr>
<td>A</td>
<td>(2, 2)</td>
</tr>
<tr>
<td></td>
<td>(1, 3)</td>
</tr>
</tbody>
</table>

7. Refer to Table 2. This table shows a game played between two players, A and B. The payoffs in the table are shown as (Payoff to A, Payoff to B). Which of the following statements about this game is true?
   a. Up is a dominant strategy for A and Right is a dominant strategy for B.
   b. Up is a dominant strategy for A and Left is a dominant strategy for B.
   c. Down is a dominant strategy for A and Right is a dominant strategy for B.
   d. Down is a dominant strategy for A and Left is a dominant strategy for B.

8. Refer to Table 2. This table shows a game played between two players, A and B. The payoffs in the table are shown as (Payoff to A, Payoff to B). Which outcome is the Nash equilibrium in this game?
   a. Up-Right
   b. Up-Left
   c. Down-Right
   d. Down-Left

9. In economics, the term "derived demand" refers to
   a. the derivative of the demand curve.
   b. an artificial demand curve.
   c. the demand curve for an input generated by the desire to produce and sell output in a downstream market.
   d. the supply curve for an input generated by the desire to produce and sell output in a downstream market.

10. The impact of one person's actions on the well-being of a bystander is called
    a. an economic dilemma.
    b. deadweight loss.
    c. a multi-party problem.
    d. an externality.

11. If the price elasticity of demand for tuna is 0.7, then a 1.5% increase in the price of tuna will decrease the quantity demanded of tuna by
    a. 1.05% and tuna sellers' total revenue will increase as a result.
    b. 1.05% and tuna sellers' total revenue will decrease as a result.
    c. 2.14% and tuna sellers' total revenue will increase as a result.
    d. 2.14% and tuna sellers' total revenue will decrease as a result.

12. Suppose a tax of $1 per unit is imposed on a good. The more elastic the supply of the good, other things equal,
    a. the smaller is the response of quantity supplied to the tax.
    b. the larger is the tax burden on sellers relative to the tax burden on buyers.
    c. the larger is the deadweight loss of the tax.
    d. All of the above are correct.
13. Consider a diagram describing the budget constraint for a consumer choosing to allocate income of $1000 between books and bread where the number of books consumed is on the vertical axis. The effect on the budget constraint of a rise in the price of books is represented
   a. by a parallel shift inward of the budget constraint
   b. a counterclockwise rotation of the budget constraint holding the book intercept fixed.
   c. a counterclockwise rotation of the budget constraint holding the bread intercept fixed.
   d. a clockwise rotation of the budget constraint holding the book intercept fixed.

14. Consider airfares on flights between New York and Minneapolis. When the airfare is $250, the quantity demanded of tickets is 2,000 per week. When the airfare is $280, the quantity demanded of tickets is 1,700 per week. Using the midpoint method,
   a. the price elasticity of demand is about 1.43 and an increase in the airfare will cause airlines' total revenue to decrease.
   b. the price elasticity of demand is about 1.43 and an increase in the airfare will cause airlines' total revenue to increase.
   c. the price elasticity of demand is about 0.70 and an increase in the airfare will cause airlines' total revenue to decrease.
   d. the price elasticity of demand is about 0.70 and an increase in the airfare will cause airlines' total revenue to increase.

15. Suppose that a steel factory emits a certain amount of air pollution, which constitutes a negative externality. If the market does not internalize the externality,
   a. the supply curve would adequately reflect the marginal social cost of production.
   b. consumers will be required to pay a higher price for steel than they would have if the externality were internalized.
   c. the market equilibrium quantity will be more than the socially optimal quantity.
   d. producers will produce less steel than they otherwise would if the externality were internalized.

16. Which of the following represents the firm's short-run condition for shutting down?
   a. Shut down if TR < TC
   b. Shut down if TR < FC
   c. Shut down if P < ATC
   d. Shut down if TR < VC

17. Which of the following represents the firm's long-run condition for exiting a market?
   a. Exit if P < MC
   b. Exit if P < FC
   c. Exit if P < ATC
   d. Exit if MR < MC
18. Refer to Figure 2. The tax causes consumer surplus to decrease by the area
a. A.
b. B + C.
c. A + B + C.
d. A + B + C + D + F.

19. Refer to Figure 2. One effect of the tax is to
a. create a deadweight loss of C.
b. create a deadweight loss of C + F.
c. create a deadweight loss of G.
d. create a deadweight loss of G + H.

20. A profit-maximizing competitive firm which sells its product at a price $P$ will want to hire more labor if
a. the marginal product of labor times $P$ is less than the wage.
b. the marginal product of labor times $P$ is more than the wage.
c. the average product of labor times $P$ is more than the wage.
d. the marginal product of labor times $P$ is less than the average revenue.
Two cigarette manufacturers (Firm A and Firm B) are faced with lawsuits from states to recover the healthcare related expenses associated with cigarette smoking. Both cigarette firms have evidence that indicates that cigarette smoke causes lung cancer (and other related illnesses). State prosecutors do not have access to the same data used by cigarette manufacturers and thus will have difficulty recovering full costs without the help of at least one cigarette firm study. Each firm has been presented with an opportunity to lower its liability in the suit if it cooperates with attorneys representing the states.

**Table 3**

<table>
<thead>
<tr>
<th>Firm A</th>
<th>Concede that cigarette smoke causes lung cancer</th>
<th>Argue that there is no evidence that smoke causes cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm B Concede that cigarette smoke causes lung cancer</td>
<td>Firm A profit = $20</td>
<td>Firm A profit = $-50</td>
</tr>
<tr>
<td></td>
<td>Firm B profit = $-15</td>
<td>Firm B profit = $-5</td>
</tr>
<tr>
<td></td>
<td>Firm A profit = $-5</td>
<td>Firm A profit = $-10</td>
</tr>
<tr>
<td></td>
<td>Firm B profit = $-50</td>
<td>Firm B profit = $-10</td>
</tr>
</tbody>
</table>

21. **Refer to Table 3.** Pursuing its own best interests, Firm B will concede that cigarette smoke causes lung cancer
   a. only if Firm A concedes that cigarette smoke causes lung cancer.
   b. only if Firm A does not concede that cigarette smoke causes lung cancer.
   c. regardless of whether Firm A concedes that cigarette smoke causes lung cancer.
   d. None of the above; in pursuing its own best interests, Firm B will never concede that cigarette smoke causes lung cancer.

22. **Refer to Table 3.** If both firms follow a dominant strategy, Firm A's payoffs will be
   a. $-50
   b. $-20
   c. $-10
   d. $-5

23. If a consumer is willing and able to pay $20 for a particular good and if he pays $16 for the good, then for that consumer, consumer surplus amounts to
   a. $4.
   b. $16.
   c. $20.
   d. $36.

24. Which of the following is *not* a determinant of demand?
   a. the price of a resource that is used to produce the good
   b. the price of a complementary good
   c. the price of the good next month
   d. the price of a substitute good
25. In a competitive market the current price is $7, and the typical firm in the market has ATC = $7.50 and AVC = $7.15.
   a. In the short run firms will shut down, and in the long run firms will leave the market.
   b. In the short run firms will continue to operate, but in the long run firms will leave the market.
   c. New firms will likely enter this market to capture any remaining economic profits.
   d. In the long run the market will cease to exist.

26. In a competitive market the price is $8. A typical firm in the market has ATC = $6, AVC = $5, and MC = $8. How much economic profit is the firm earning in the short run?
   a. $0 per unit
   b. $1 per unit
   c. $2 per unit
   d. $3 per unit

27. You purchase a $30, nonrefundable ticket to a play at a local theater. Ten minutes into the show you realize that it is not a very good show and place only a $10 value on seeing the remainder of the show. Alternatively you could leave the theater and go home and watch TV or read a book. You place an $8 value on watching TV and a $6 value on reading a book.
   a. You should leave the theater since the net benefit from seeing the remainder of the show is -$20, while going home will earn you at least $8 of satisfaction.
   b. You should stay and watch the remainder of the show.
   c. You should go home and watch TV.
   d. You should go home and read a book.

28. The accountants hired by Davis Golf Course have determined total fixed cost to be $75,000, total variable cost to be $130,000, and total revenue to be $145,000. Because of this information, in the short run, Davis Golf Course should
   a. decide to shut-down.
   b. decide to exit the industry.
   c. decide to stay open because shutting down would be more expensive.
   d. decide to stay open because they are making an economic profit.

29. A firm will make the most profits if it produces the quantity of output at which
   a. marginal cost equals average cost.
   b. profit per unit is greatest.
   c. marginal revenue equals total revenue.
   d. marginal revenue equals marginal cost.

30. Joe's Garage operates in a perfectly competitive market. At the point where marginal cost equals marginal revenue, ATC = $20, AVC = $15, and the price per unit is $18. In this situation,
   a. Joe's Garage is earning a positive economic profit.
   b. Joe's Garage should shut down immediately.
   c. Joe's is losing money in the short run, but should continue to operate.
   d. the market price will rise in the short run to increase profits.

31. One key difference between an oligopoly market and a competitive market is that oligopolistic firms
   a. are price takers while competitive firms are not.
   b. can affect the profit of other firms in the market by the choices they make while individual firms in competitive markets do not affect each other by the choices they make.
   c. sell completely unrelated products while competitive firms do not.
   d. sell their product at a price equal to marginal cost while competitive firms do not.
32. As a group, oligopolists would always earn the highest profit if they would
   a. produce the perfectly competitive quantity of output.
   b. produce more than the perfectly competitive quantity of output.
   c. charge the same price that a monopolist would charge if the market were a monopoly.
   d. operate according to their own individual self-interests.

33. Without trade,
   a. a country is better off because it will have to learn to be self-sufficient without trade.
   b. a country's production possibilities frontier is also its consumption possibilities frontier.
   c. a country can still benefit from international specialization.
   d. interdependence is more extensive than it would be with trade.

The next figure shows the production possibility frontier for the US and for Japan. You should assume that each country has the same amount of labor which is the only input used in production.

**Figure 3**

34. According to the production possibility frontier in **Figure 3**, Japan has
   a. a comparative advantage in wheat.
   b. a comparative advantage in computers.
   c. an absolute advantage in wheat.
   d. an absolute advantage in computers.
The following two questions concern the next figure. The game is played by players 1 and 2. The numbers at each node describe who moves at that node. The first entry in brackets lists the dollar payment to player 1 and the second entry the payoffs to player 2.

*Figure 4*

35. The game described in *Figure 4*
   a. is a simultaneous move game.
   b. is a sequential game.
   c. is an example of adverse selection.
   d. is an illustration of Rock, Paper, Scissors

36. The unique Backward Induction equilibrium to the game described in *Figure 4* results in payoffs
   a. (10,20)
   b. (100,5)
   c. (100, 200)
   d. (1,220).
Figure 5

37. Refer to Figure 5. Which of the following can be inferred from the figure above?
   (i) Marginal cost is increasing at all levels of output.
   (ii) Marginal product is increasing at low levels of output.
   (iii) Marginal product is decreasing at high levels of output.

   a. (i) and (ii)
   b. (ii) and (iii)
   c. (i) and (iii)
   d. (ii) only

38. If marginal cost is greater than average total cost then
   a. profits are increasing.
   b. economies of scale are becoming greater.
   c. average total cost remains constant.
   d. average total cost is increasing.

39. When the marginal product of an input declines as the quantity of that input increases, the production function exhibits
   a. increasing returns to scale.
   b. decreasing returns to scale.
   c. diminishing total product.
   d. diminishing marginal product.
40. Refer to Figure 6. When the relevant labor demand curve is $D_1$ and the labor market is in equilibrium,
   a. the value of the marginal product of labor to firms is less than $W_1$.
   b. the opportunity cost of leisure to workers is greater than $W_1$.
   c. the wage is $W_1$.
   d. All of the above are correct.

41. Refer to Figure 6. The shift of the labor demand curve from $D_1$ to $D_2$ could possibly be explained by
   a. technological progress.
   b. an increase in the price of firms' output.
   c. an increase in the supply of a relevant factor of production other than labor.
   d. All of the above are correct.

42. Refer to Figure 6. Assume $W_1 = $20 and $W_2 = $22 and the market is always in equilibrium. Then the
   shift of the labor demand curve from $D_1$ to $D_2$
   a. increases the value of the marginal product of labor by $2$.
   b. increases the value of the marginal product of labor by less than $2$.
   c. decreases the value of the marginal product of labor by more than $2$.
   d. does not change the value of the marginal product of labor.

43. Refer to Figure 6. If the relevant labor demand curve is $D_2$ and the current wage is $W_1$,
   a. there is a surplus of labor.
   b. there is a shortage of labor.
   c. the quantity of labor supplied exceeds the quantity of labor demanded.
   d. workers are failing to take into account the work-leisure tradeoff in deciding what quantity of
      labor to supply at alternative wages.
44. Refer to Figure 7. The consumer is likely to select the consumption bundle at
   a. point B
   b. point C
   c. point D
   d. point E

45. Refer to Figure 7. Starting from the choice chosen in question 44, it would be possible for the consumer to reach I₂ if
   a. the price of Y decreases.
   b. the price of X decreases.
   c. income increases.
   d. All of the above would be correct.

46. Who among the following is a free rider?
   a. Barry steals candy from the store where he works.
   b. Betty rides to work with Sally, but she pays Sally for gasoline and other travel-related expenses.
   c. Joe drives 20,000 miles a year on a congested toll road.
   d. Fred watches many public television programs, but he has never sent in a contribution to the station.
47. **Refer to Figure 8.** Which of the following statements is correct?
   a. Point A is preferred equally to point E.
   b. Point A is preferred equally to point C.
   c. The bundle associated with point B contains more Ho-Ho's than that associated with point C.
   d. The bundles along indifference curve $I_1$ are preferred to those along indifference curve $I_2$.

48. **Refer to Figure 8.** Which of the following statements is true for a consumer who moves from point A to point D?
   a. It is difficult to compare the level of consumer satisfaction between points D and A.
   b. The consumer is indifferent between point A and point D.
   c. The consumer is definitely worse off.
   d. The consumer is likely to place a higher relative value on Twinkies at point A than at point D.

49. A view of a spectacular sunset that can be seen only along a private beach is an example of a
   a. private good.
   b. public good.
   c. nonrival but excludable good.
   d. rival but nonexcludable good.
The figure below depicts average total cost functions for a firm that produces automobiles.

50. **Refer to Figure 9.** Which of the curves is most likely to characterize the short-run average total cost curve of the smallest factory?
   a. ATC_A
   b. ATC_B
   c. ATC_C
   d. ATC_D

51. **Refer to Figure 9.** This firm experiences diseconomies of scale at what output levels?
   a. output levels above N
   b. output levels between M and N
   c. output levels below M
   d. All of the above are correct, if the firm is operating in the long run.
Table 4

Teacher’s Helper is a small company that has a subcontract to produce instructional materials for disabled children in public school districts. The owner rents several small rooms in an office building in the suburbs for $600 a month and has leased computer equipment that costs $480 a month.

<table>
<thead>
<tr>
<th>Output (Instructional Modules per Month)</th>
<th>Fixed Costs</th>
<th>Variable Costs</th>
<th>Total Cost</th>
<th>Average Fixed Cost</th>
<th>Average Variable Cost</th>
<th>Average Total Cost</th>
<th>Marginal Cost</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>10,880</td>
<td></td>
<td></td>
<td></td>
<td>980</td>
</tr>
</tbody>
</table>

52. Refer to Table 4. What is the marginal cost of creating the tenth instructional module in a given month?
   a. $900
   b. $1,250
   c. $2,500
   d. $3,060

53. Refer to Table 4. What is the average variable cost for the month if six instructional modules are produced?
   a. $180.00
   b. $533.33
   c. $700.00
   d. $713.33

54. For a large firm that produces and sells automobiles, which of the following costs would be a variable cost?
   a. The $20 million payment that the firm pays each year for accounting services
   b. The cost of the steel that is used in producing automobiles
   c. The rent that the firm pays for office space in a suburb of St. Louis
   d. All of the above are correct

55. The temptation of imperfectly-monitored workers to shirk their responsibilities is
   a. an example of the adverse-selection problem.
   b. an example of the "lemons" problem.
   c. an example of moral hazard.
   d. an example of signaling.
56. Assume that your roommate is very messy. Suppose she gets a $100 benefit from being messy but imposes a $200 cost on you. The Coase theorem would suggest that an efficient solution would be for you to
a. pay your roommate at least $100 but no more than $200 to clean up after herself.
b. pay your roommate at least $201 to clean up after herself.
c. charge your roommate at least $100 to have a messy room.
d. charge your roommate at least $200 but no more than $300 to keep you from complaining about the mess.

57. Bill owns 3 acres of beautiful wooded land. He has created a short walking trail through the woods. Because the terrain is hilly, the only safe entrance to the trail is at the front of Bill's property. When Bill decides to move to be closer to his grandchildren, he donates the land to the state with the understanding that the land will be used as a state park. Because the trail is short, only about 50 people can comfortably enjoy it although many more would like to enter. This state park is an example of a good that is
a. both rival in consumption and excludable.
b. neither rival in consumption nor excludable.
c. nonrival in consumption and excludable.
d. rival in consumption and nonexcludable.

Table 5

<table>
<thead>
<tr>
<th></th>
<th>Labor Hours Needed to Make 1 Pound of</th>
<th>Pounds produced in 40 hours:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Meat</td>
<td>Potatoes</td>
</tr>
<tr>
<td>Farmer</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Rancher</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

58. Refer to Table 5. The opportunity cost of 1 pound of meat for the farmer is
a. 1/4 hour of labor.
b. 4 hours of labor.
c. 4 pounds of potatoes.
d. 1/4 pound of potatoes.

59. Refer to Table 5. Which statement is correct?
a. The farmer has an absolute advantage in the production of meat.
b. The farmer has an absolute advantage in the production of potatoes.
c. The farmer has an absolute advantage in nothing.
d. The answer cannot be determined from the information provided.

60. Refer to Table 5. The rancher has a comparative advantage in
a. neither good, and the farmer has a comparative advantage in both goods.
b. both goods, and the farmer has a comparative advantage in neither good.
c. potatoes, and the farmer has a comparative advantage in meat.
d. meat, and the farmer has a comparative advantage in potatoes.