McMaster University Department of Economics
ECON 1B03
Winter 2011

Test 2 VERSION 1

Saturday March 12, 2011
90 minutes
Instructor: H Holmes

MULTIPLE CHOICE

Answer all questions on the scan sheet using HB pencil.
Calculators are permitted.
Hand in the scan and this sheet separately.

TOTAL MC MARKS AVAILABLE: 45

NAME:_____

STUDENT #:_____

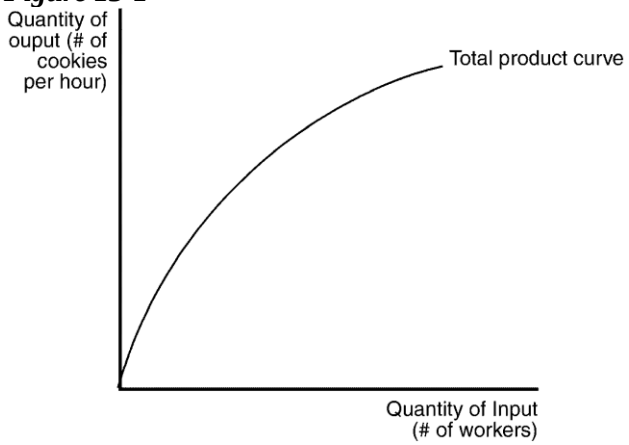
Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. A production function is a relationship between
a. inputs and quantity of output.
b. inputs and revenue.
c. inputs and costs.
d. inputs and profit.

____ 2. The marginal product of labour is equal to the
a. incremental cost associated with a one unit increase in labour.
b. incremental profit associated with a one unit increase in labour.
c. increase in labour necessary to generate a one unit increase in output.
d. increase in output obtained from a one unit increase in labour.

The figure below depicts a production function for a firm that produces cookies. Use the figure to answer the following questions.

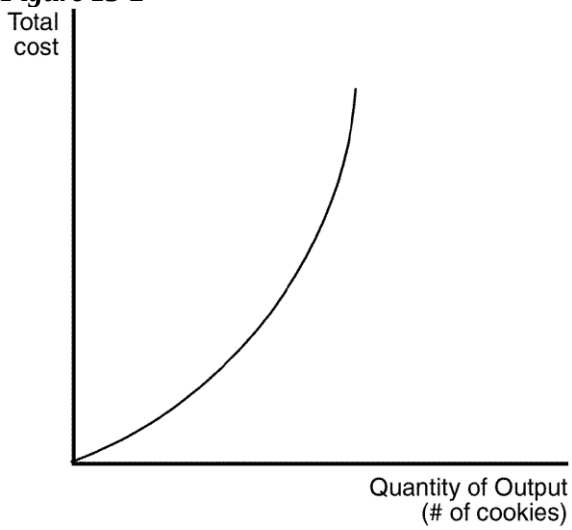
Figure 13-1



____ 3. **Refer to Figure 13-1**. As the number of workers increases,
a. total output increases, but at a decreasing rate.
b. marginal product increases, but at a decreasing rate.
c. marginal product increases at an increasing rate.
d. total output decreases.

The figure below depicts a total cost function for a firm that produces cookies. Use the figure to answer the following questions.

Figure 13-2



____ 4. **Refer to Figure 13-2**. The changing slope of the total cost curve reflects
a. decreasing average variable cost.
b. decreasing average total cost.
c. decreasing marginal product.
d. increasing fixed cost.

____ 5. Let L represent the number of workers hired by a firm and let Q represent that firm's quantity of output. Assume two points on the firm's production function are (L = 12, Q = 122) and (L = 13, Q = 130). Then the marginal product of the 13th worker is
a. 8 units of output.
b. 10 units of output.
c. 122 units of output.
d. 130 units of output.

____ 6. If marginal cost is rising,
a. average variable cost must be falling.
b. average fixed cost must be rising.
c. marginal product must be falling.
d. marginal product must be rising.

____ 7. When marginal cost is less than average total cost,
a. marginal cost must be falling.
b. average variable cost must be falling.
c. average total cost is falling.
d. average total cost is rising.

Table 13-1

Measures of Cost for ABC Inc. Widget Factory			
Quantity of Widgets	Variable Costs	Total Costs	Fixed Costs
0			$10
1	$ 1		
2	$ 3	$13	
3	$ 6	$16	
4	$10		
5		$25	
6	$21		$10

____ 8. **Refer to Table 13-1**. The average fixed cost of producing five widgets is
a. $1.00.
b. $2.00.
c. $3.00.
d. None of the above are correct.

____ 9. **Refer to Table 13-1**. The average total cost of producing one widget is
a. $1.00.
b. $10.00.
c. $11.00.
d. $22.00.

____ 10. **Refer to Table 13-1**. The marginal cost of producing the sixth widget is
a. $1.00.
b. $3.50.
c. $5.00.
d. $6.00.

____ 11. At what level of output will average variable cost equal average total cost?
a. when marginal cost equals average total cost
b. for all levels of output in which average variable cost is falling
c. when marginal cost equals average variable cost
d. There is not a level of output where this occurs, as long as fixed costs are positive.

____ 12. Thirsty Thelma owns and operates a small lemonade stand. When Thelma is producing a small quantity of lemonade she has few workers and her equipment is not being fully utilized. Because she can easily put her idle resources to use,
a. the marginal cost of an extra worker is large.
b. the marginal cost of one more glass of lemonade is small.
c. the marginal product of an extra worker is small.
d. her lemonade stand is likely to be crowded with workers.

____ 13. Consider the following information about bread production at Beth's Bakery:

Worker	Marginal Product
1	5
2	7
3	10
4	11
5	8
6	6
7	4

Beth pays all her workers the same wage and labour is her only variable cost. From this information we can conclude that Beth's marginal cost

a. declines as output increases from 0 to 33, but increases after that.
b. declines as output increases from 0 to 11, but increases after that.
c. increases as output increases from 0 to 11, but declines after that.
d. continually increases as output rises.

____ 14. At Bert's Bootery, the total cost of producing twenty pairs of boots is $400. The marginal cost of producing the twenty-first pair of boots is $83. We can conclude that the average

a. variable cost of 21 pairs of boots is $23.
b. total cost of 21 pairs of boots is $23.
c. total cost of 21 pairs of boots is $15.09.
d. total cost of 21 pairs of boots cannot be calculated from the information given.

____ 15. Economies of scale occur when

a. long-run average total costs rise as output increases.
b. long-run average total costs fall as output increases.
c. average fixed costs are falling.
d. average fixed costs are constant.

____ 16. When a firm in a competitive market receives $500 in total revenue, it has a marginal revenue of $10. What is the average revenue, and how many units were sold?

a. $5 and 100
b. $10 and 50
c. $10 and 100
d. $50 and 5
e. The answer cannot be determined from the information given.

Use the information for a competitive firm in the table below to answer the following questions.

Table 14-2

Quantity	Total Revenue	Total Cost
0	$0	$10
1	9	14
2	18	19
3	27	25
4	36	32
5	45	40
6	54	49
7	63	59
8	72	70
9	81	82

____ 17. **Refer to Table 14-2**. At a production level of 4 units which of the following is true?
a. Marginal cost is $6.
b. Total revenue is greater than variable cost.
c. Marginal revenue is less than marginal cost.
d. All of the above are correct.

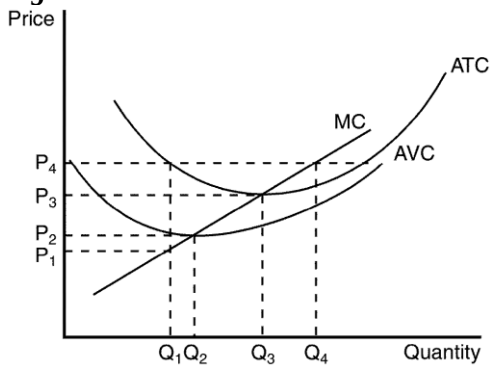
____ 18. **Refer to Table 14-2**. At which quantity of output is marginal revenue equal to marginal cost?
a. 3
b. 6
c. 8
d. All of the above are correct.

____ 19. **Refer to Table 14-2**. If this firm chooses to maximize profit it will choose a level of output where marginal cost is equal to
a. 6.
b. 7.
c. 8.
d. 9.

____ 20. **Refer to Table 14-2**. If the firm finds that its marginal cost is $5, it should
a. reduce fixed costs by lowering production.
b. increase production to maximize profit.
c. decrease production to maximize profit.
d. maintain its current level of production to maximize profit.

The graph below depicts the cost structure for a firm in a competitive market. Use the graph to answer the following questions.

Figure 14-2



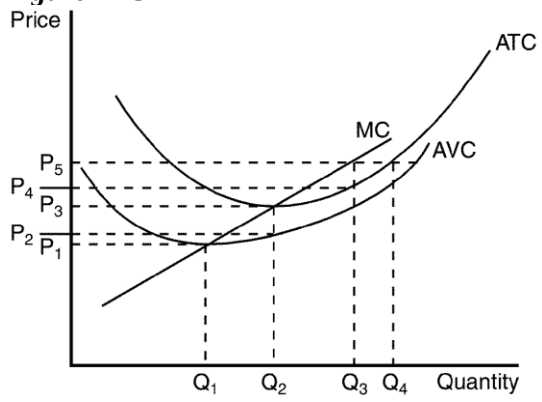
____ 21. **Refer to Figure 14-2**. When price falls from P_3 to P_1, the firm finds that
a. fixed cost is higher at a production level of Q_1 than it is at Q_3.
b. it should produce Q_1 units of output.
c. it should produce Q_3 units of output.
d. it is unwilling to produce any output.

____ 22. **Refer to Figure 14-2**. When price rises from P_3 to P_4, the firm finds that
a. fixed costs are lower at a production level of Q_4.
b. it can earn a positive profit by increasing production to Q_4.
c. profit is maximized at a production level of Q_3.
d. average revenue exceeds marginal revenue at a production level of Q_4.

____ 23. When a firm makes a short-run decision not to produce anything during a specified period of time because of current market conditions, the firm is said to
a. shut down.
b. exit.
c. withdraw.
d. leave the industry.

The figure below depicts the cost structure of a firm in a competitive market. Use the figure to answer the following questions.

Figure 14-5



____ 24. **Refer to Figure 14-5**. When market price is P_5, a profit-maximizing firm's profits can be represented by the area
a. $P_5 \times Q_3$.
b. $(P_5 - P_3) \times Q_2$.
c. $(P_5 - P_4) \times Q_3$.
d. When market price is P_5 there are no profits.

____ 25. In the long run, a profit-maximizing firm will choose to exit a market when
a. average fixed cost is falling.
b. variable costs exceed sunk costs.
c. marginal cost exceeds marginal revenue at the current level of production.
d. total revenue is less than total cost.

____ 26. A profit-maximizing firm in a competitive market is able to sell its product for $9. At its current level of output the firm's average total cost is $11. Its marginal cost curve crosses the marginal revenue curve at an output level of 10 units. Then the firm experiences a
a. profit of more than $20.
b. profit of exactly $20.
c. loss of more than $20.
d. loss of exactly $20.

____ 27. For a certain firm, the 100th unit of output that the firm produces has a marginal revenue of $10 and a marginal cost of $7. It follows that
a. the production of the 100th unit of output increases the firm's profit by $3.
b. the production of the 100th unit of output increases the firm's average total cost by $7.
c. the firm's profit-maximizing level of output is less than 100 units.
d. All of the above are correct.

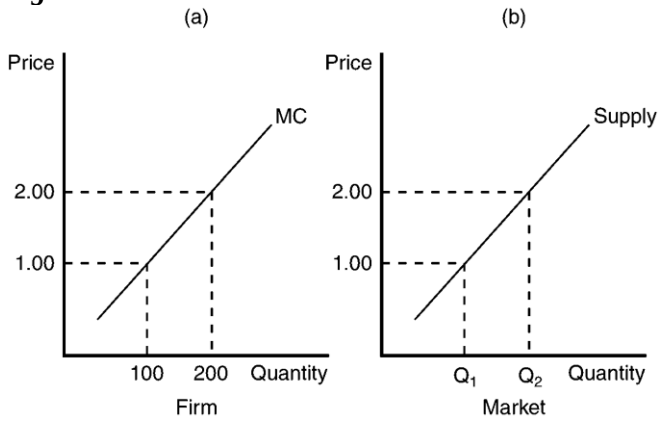
____ 28. A firm in a competitive market has the following cost structure:

Output	Total Cost
0	$5
1	$10
2	$12
3	$15
4	$24
5	$40

If the market price is $4, this firm will
a. produce two units in the short run and exit in the long run.
b. produce three units in the short run and exit in the long run.
c. produce four units in the short run and exit in the long run.
d. shut down in the short run and exit in the long run.

In the figure below, panel (a) depicts the linear marginal cost of a firm in a competitive market and panel (b) depicts the linear market supply curve for a market with a fixed number of identical firms. Use the figure to answer the following questions.

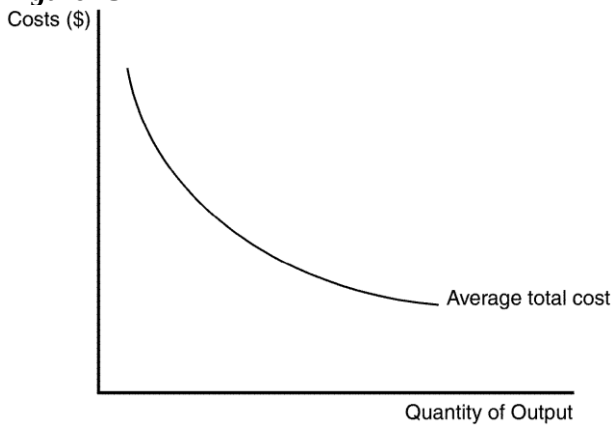
Figure 14-7



____ 29. **Refer to Figure 14-7**. If at a market price of $1.75, 52,500 units of output are supplied to this market, how many identical firms are participating in this market?
a. 75
b. 100
c. 250
d. 300

____ 30. Natural monopolies differ from other forms of monopoly because they
a. are not subject to barriers to entry.
b. are not regulated by government.
c. generally don't make a profit.
d. are generally not worried about competition eroding their monopoly position in the market.

Figure 15-1



____ 31. **Refer to Figure 15-1**. The shape of the average total cost curve in the figure suggests an opportunity for a profit-maximizing monopolist to take advantage of
a. economies of scale.
b. diseconomies of scale.
c. constant returns to scale.
d. increasing marginal cost.
e. diminishing marginal product.

____ 32. **Refer to Figure 15-1.** In view of what is known about the relationship between average total cost and marginal cost, the marginal cost curve for this firm
a. must lie entirely above the average total cost curve.
b. must lie entirely below the average total cost curve.
c. must be upward sloping.
d. does not exist.

____ 33. In order to sell more of its product, a monopolist must
a. sell to the government.
b. sell in international markets.
c. lower its price.
d. keep its price constant.
e. use its market power to force up the price of complementary products.

____ 34. A monopolist's average revenue is always
a. equal to marginal revenue.
b. greater than the price of its product.
c. equal to the price of its product.
d. less than the price of its product.

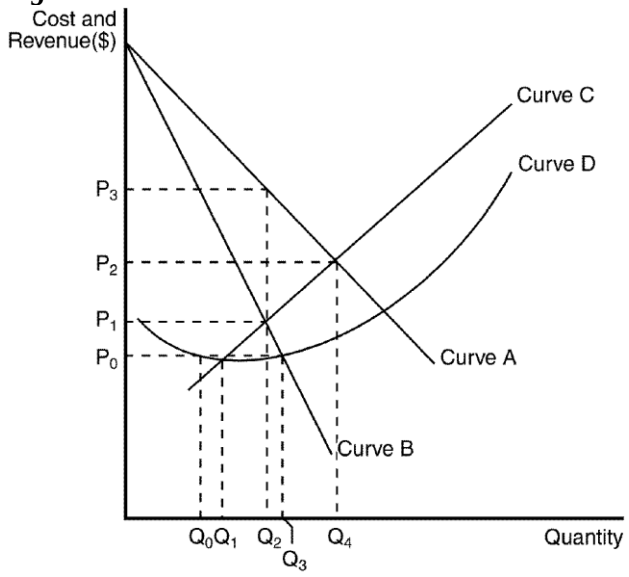
____ 35. Which of the following statements is true?
(i) When a competitive firm sells an additional unit of output, its revenue increases by an amount less than the price.
(ii) When a monopoly firm sells an additional unit of output, its revenue increases by an amount less than the price.
(iii) Average revenue is the same as price for both competitive and monopoly firms.

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

____ 36. Marginal revenue can become negative for
a. both competitive and monopoly firms.
b. competitive firms, but not for monopoly firms.
c. monopoly firms, but not for competitive firms.
d. neither competitive nor monopoly firms.

The figure below reflects the cost and revenue structure for a monopoly firm. Use it to answer the following questions.

Figure 15-2



____ 37. **Refer to Figure 15-2**. If the monopoly firm is currently producing Q_3 units of output, then a decrease in output will necessarily cause profit to
a. remain unchanged.
b. decrease.
c. increase as long as the new level of output is at least Q_2.
d. increase as long as the new level of output is at least Q_1.

____ 38. **Refer to Figure 15-2**. If the monopoly firm wants to maximize its profit, it should operate at a level of output equal to
a. Q_1.
b. Q_2.
c. Q_3.
d. Q_4.

____ 39. The profit-maximization problem for a monopolist differs from that of a competitive firm in which of the following ways?
a. A competitive firm maximizes profit at the point where marginal revenue equals marginal cost; a monopolist maximizes profit at the point where marginal revenue exceeds marginal cost.
b. A competitive firm maximizes profit at the point where average revenue equals marginal cost; a monopolist maximizes profit at the point where average revenue exceeds marginal cost.
c. For a competitive firm, marginal revenue at the profit-maximizing level of output is equal to marginal revenue at all other levels of output; for a monopolist, marginal revenue at the profit-maximizing level of output is smaller than it is for larger levels of output.
d. For a profit-maximizing competitive firm, thinking at the margin is much more important than it is for a profit-maximizing monopolist.

____ 40. Market demand is given as Qd = 60 – P. Market supply is given as Qs = 3P. Each identical firm has MC = 3Q and ATC = 1.5Q. What quantity of output will a typical firm produce?
a. 5
b. 15
c. 45
d. 50

____ 41. Market demand is given as Qd = 60 – P. Market supply is given as Qs = 3P. Each identical firm has MC = 3Q and ATC = 1.5Q. What is a firm's average total cost?
a. $1.50
b. $5.00
c. $7.50
d. $15.00

____ 42. Market demand is given as Qd = 60 – P. Market supply is given as Qs = 3P. Each identical firm has MC = 3Q and ATC = 1.5Q.What is a firm's profit?
a. $75.00

b. $37.50

c. $67.50

d. $337.50

____ 43. A monopolist faces market demand given by P = 200 - Q. It has MR = 200 – 2Q and MC = 3Q. What quantity of output will the monopolist produce in order to maximize profits?
a. 20
b. 40
c. 50
d. 60

____ 44. A monopolist faces market demand given by P = 200 - Q. It has MR = 200 – 2Q and MC = 3Q. What price will the monopolist charge in order to maximize profits?
a. $140
b. $150
c. $160
d. $180

____ 45. A monopolist faces market demand given by P = 200 - Q. It has MR = 200 – 2Q and MC = 3Q. What is the deadweight loss due to the monopoly?
a. $0
b. $100
c. $200
d. $400

____ 46. What is the location of the Instructional Assistant's (Shadab's) office?
a. KTH 442
b. KTH 433
c. KTH 333
d. KTH 334