McMaster University
Department of Economics

ECON 1B03
Midterm Test #2

VERSION 1

Instructor: Professor H Holmes
Duration: 1.5 hours
Total Number of Pages: 11

INSTRUCTIONS:

Answer all questions on the scan sheets. USE AN HB PENCIL ONLY. Make sure you carefully fill in the bubbles. YOU MUST FILL IN YOUR STUDENT NUMBER, AND VERSION NUMBER ON THE SCAN SHEET OR YOUR GRADE WILL NOT BE RECORDED AND YOU WILL LOSE THE BONUS MARK.

You may use the Casio FX calculator.

Hand in the scan sheet and this test copy.

**TOTAL MARKS AVAILABLE**: 45

NAME:_____

STUDENT #: _____

MUGSI ID: _____

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

_____ 1. A price ceiling
   a. is a legal maximum on the price at which a good can be sold.
   b. is a legal minimum on the price at which a good can be sold.
   c. occurs when the price in the market is temporarily above equilibrium.
   d. will usually result in a market surplus.

Figure 6-2
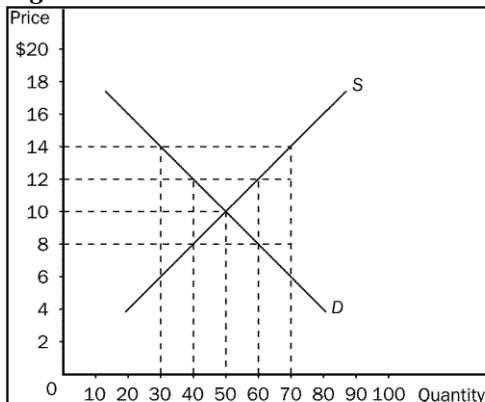
_____ 2. **Refer to Figure 6-2**. A binding price ceiling would exist at a price of
   a. $14.00.
   b. $12.00.
   c. $10.00.
   d. $8.00.

_____ 3. When binding price ceilings are imposed in a market
   a. price no longer serves as a rationing device.
   b. the market will be cleared of any shortages or surpluses that existed previously.
   c. buyers and sellers both benefit equally.
   d. the government is attempting to improve market efficiency.

_____ 4. Assume that the demand and supply curves for cars are elastic. If the government imposed a $500 tax on the buyer of each car, we can assume that the
   a. equilibrium price of a car would decrease by less than $500.
   b. price of a car would decrease by exactly $500.
   c. price of a car would decrease by more than $500.
   d. price of a car would not change if both curves were elastic.

Figure 6-10
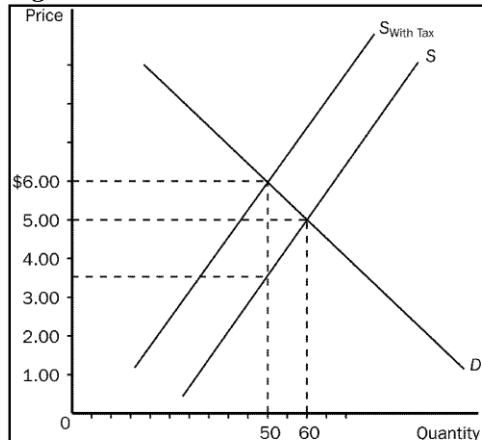
_____ 5. **Refer to Figure 6-10**. The equilibrium price in the market after the tax is imposed is
a. $1.00.
b. $3.50.
c. $5.00.
d. $6.00.

_____ 6. **Refer to Figure 6-10**. The price buyers will pay after the tax is imposed is
a. $1.00.
b. $3.50.
c. $5.00.
d. $6.00.

_____ 7. **Refer to Figure 6-10**. The price sellers receive after the tax is imposed is
a. $1.00.
b. $3.50.
c. $5.00.
d. $6.00.

_____ 8. **Refer to Figure 6-10**. The amount of the tax imposed in this market is
a. $1.00.
b. $1.50.
c. $2.50.
d. $3.50.

_____ 9. **Refer to Figure 6-10**. The amount of the tax that buyers would pay would be
a. $1.00.
b. $1.50.
c. $2.50.
d. $3.00.

_____ 10. **Refer to Figure 6-10 on the previous page**. The amount of the tax that sellers would pay would be
    a. $1.00.
    b. $1.50.
    c. $2.50.
    d. $3.00.

_____ 11. If a tax is imposed on a market with elastic demand and inelastic supply,
    a. buyers will bear most of the burden of the tax.
    b. sellers will bear most of the burden of the tax.
    c. the burden of the tax will be shared equally between buyers and sellers.
    d. it is impossible to determine how the burden of the tax will be shared.

_____ 12. A quota raises the price of wheat to $40 per bushel . The quota rent is $22. What price would sellers be willing to take for supplying the quota quantity?
    a. $40   c. $18
    b. $22   d. $62.

_____ 13. 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 total cost function for a firm that produces cookies. Use the figure to answer the following questions.
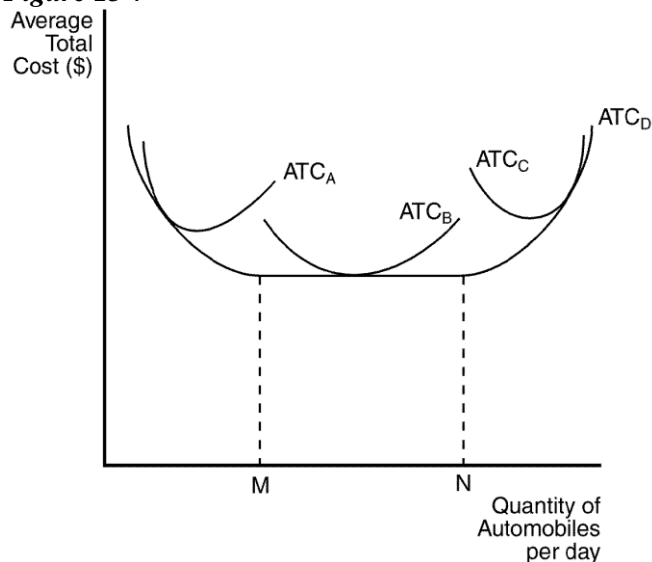
Figure 13-2

Quantity of Output
(# of cookies)
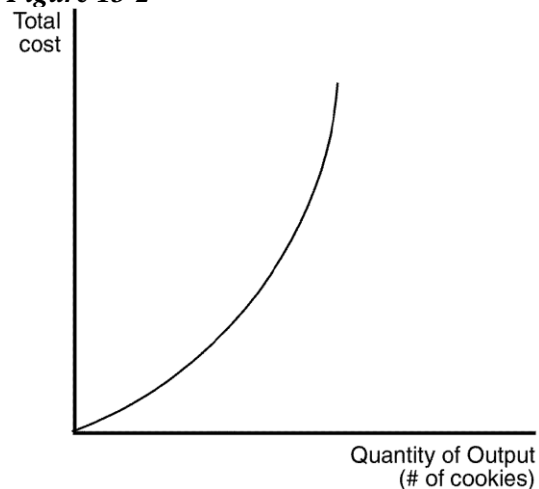
_____ 14. **Refer to Figure 13-2**. Which of the following statements best captures the nature of the underlying production function?
    a. Output increases at a decreasing rate with additional units of input.
    b. Output increases at an increasing rate with additional units of input.
    c. Output decreases at a decreasing rate with additional units of input.
    d. Output decreases at an increasing rate with additional units of input.

_____ 15. 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.

_____ 16. The cost of producing the typical unit of output is the firm's
   a.   average total cost.
   b.   opportunity cost.
   c.   variable cost.
   d.   marginal cost.

_____ 17. The cost of producing an additional unit of output is the firm's
   a.   marginal cost.
   b.   productivity offset.
   c.   variable cost.
   d.   average variable cost.

_____ 18. Diminishing marginal product suggests that the marginal
   a.   cost of an extra worker is unchanged.
   b.   cost of an extra worker is less than the previous worker's marginal cost.
   c.   product of an extra worker is less than the previous worker's marginal product.
   d.   product of an extra worker is greater than the previous worker's marginal product.

_____ 19. The efficient scale of the firm is the quantity of output that
   a.   maximizes marginal product.
   b.   maximizes profit.
   c.   minimizes average total cost.
   d.   minimizes average variable cost.

_____ 20. 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.

The figure below depicts average total cost functions for a firm that produces automobiles. Use the figure to answer the following questions.
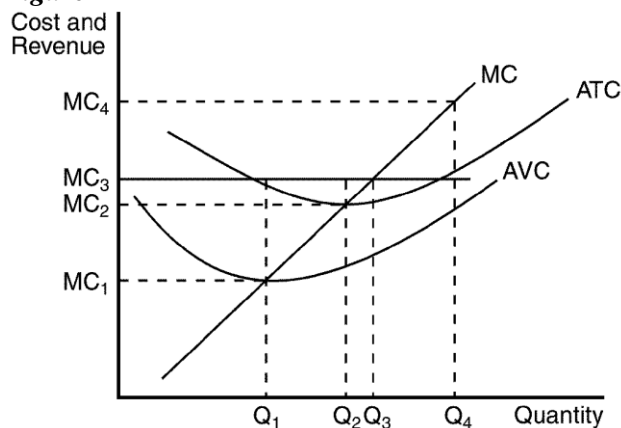
Figure 13-7

____ 21. **Refer to Figure 13-7**. 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

____ 22. **Refer to Figure 13-7**. 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.

____ 23. When a firm in a competitive market produces 10 units of output, it has a marginal revenue of $8.00. What would be the firm's total revenue when it produces 6 units of output?
a. $4.80
b. $6.00
c. $48.00
d. $60.00

____ 24. Changes in the output of a perfectly competitive firm, without any change in the price of the product, will change the firm's
a. total revenue.
b. marginal revenue.
c. average revenue.
d. All of the above are correct.

_____ 25. In a competitive market,
   a. no single buyer or seller can influence the price of the product.
   b. there is a small number of sellers.
   c. the goods offered by the different sellers are markedly different.
   d. All of the above are correct.

The graph below depicts the cost structure for a firm in a competitive market. Use the graph to answer the following questions.
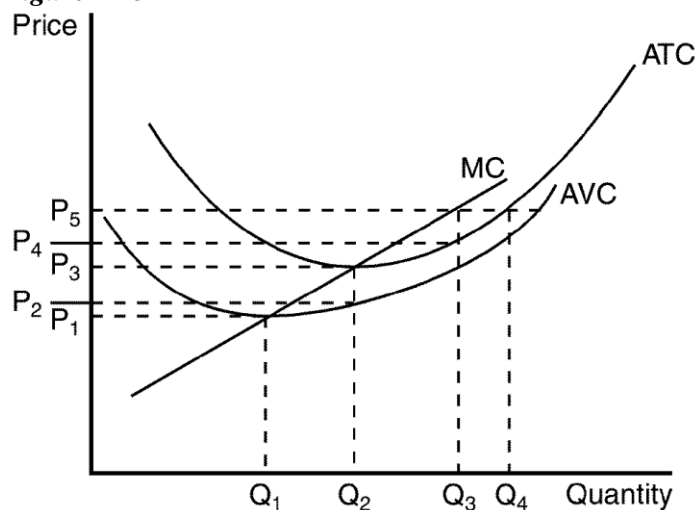
Figure 14-1

Note: On the above diagram, change the vertical-axis labels from MC₁ to P₁, MC₂ to P₂, etc.

_____ 26. **Refer to Figure 14-1**. When price is equal to P_3, the profit-maximizing firm will produce what level of output?
   a. Q_1
   b. Q_2
   c. Q_3
   d. Q_4

_____ 27. **Refer to Figure 14-1**. When market price is at P_2, a firm producing output level Q_1 would experience
   a. profits equal to $(P_2 - P_1) \times Q_1$.
   b. losses equal to $(P_2 - P_1) \times Q_1$.
   c. losses because $P_2 < ATC$ at output level Q_1.
   d. zero profits.

_____ 28. **Refer to Figure 14-1**. When market price is at P_4, a profit-maximizing firm will produce what level of output?
   a. Q_1
   b. Q_2
   c. Q_3
   d. Q_4

_____ 29. When a perfectly competitive firm makes a decision to shut down, it is most likely that
   a. marginal cost is above average variable cost.
   b. marginal cost is above average total cost.
   c. price is below the minimum of average variable cost.
   d. fixed costs exceed variable costs.

_____ 30. When profit-maximizing firms in competitive markets are earning profits,
   a. market demand must exceed market supply at the market equilibrium price.
   b. market supply must exceed market demand at the market equilibrium price.
   c. new firms will enter the market.
   d. the most inefficient firms will be encouraged to leave the market.

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

_____ 31. **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.

_____ 32. **Refer to Figure 14-5**. Firms would be encouraged to enter this market for all prices that exceed
   a. P_1.
   b. P_2.
   c. P_3.
   d. None of the above are correct.

____ 33. A profit-maximizing firm in a competitive market is currently producing 100 units of output. It has average revenue of $10, and its average total cost is $8. It follows that the firm's
   a. average total cost curve intersects the marginal cost curve at an output level of less than 100 units.
   b. average variable cost curve intersects the marginal cost curve at an output level of less than 100 units.
   c. profit is $200.
   d. All of the above are correct.

____ 34. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. How much will each firm produce?
   a. 100   c. 10
   b. 50   d. 5

____ 35. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. The profit for each firm is
   a. $20   c. $40
   b. $400   d. $200

____ 36. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. In the long run, the numbere of firms will be
   a. 20   c. 35
   b. 21   d. not enough information to determine.

____ 37. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. Suppose the government imposes a per unit tax of $2 on consumers. The new demand curve is Qd_{tax} = 108 - P. The price consumers now pay is
   a. $9.82   c. $10
   b. $11.82   d. $12

____ 38. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. Suppose the government imposes a per unit tax of $2 on consumers. The new demand curve is Qd_{tax} = 108 - P. The deadweight loss due to taxation is
   a. $2.00   c. $1.80
   b. $3.60   d. $4.20

____ 39. There are 20 identical firms in a perfectly competitive market. Market demand is Qd = 110 - P and market supply is Qs = 10P. Each firm has MC = 2Q and constant ATC = 6. Suppose the government imposes a per unit tax of $2 on consumers. The new demand curve is Qd_{tax} = 108 - P. Consumers bear the _____ burden of the tax because _____ is more _____ than _____.
   a. smaller; demand; elastic; supply   c. larger; supply; elastic; demand
   b. larger; demand; elastic; supply   d. smaller; supply; inelastic; demand

_____ 40. A profit-maximizing monopolist will produce the level of output at which
    a.   average revenue is equal to average total cost.
    b.   average revenue is equal to marginal cost.
    c.   marginal revenue is equal to marginal cost.
    d.   total revenue is equal to opportunity cost.

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

Figure 15-2
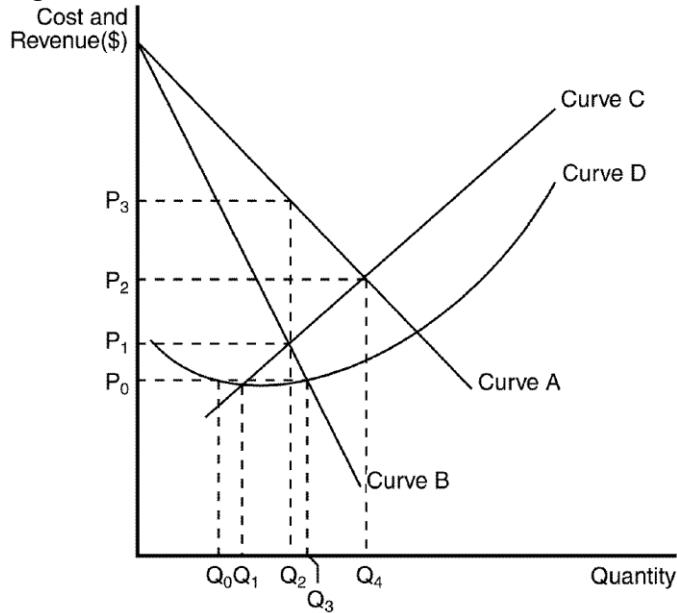
_____ 41. **Refer to Figure 15-2**. If the monopoly firm wants to maximize its profit, it should operate at a level of output equal to
    a. Q_1.
    b. Q_2.
    c. Q_3.
    d. Q_4.

_____ 42. **Refer to Figure 15-2**. Profit will be maximized by charging a price equal to
    a. P_0.
    b. P_1.
    c. P_2.
    d. P_3.

_____ 43. A monopoly faces market demand of $P = 100 - 2Q$ and $MR = 100 - 4Q$. Its $TC = .25Q^2$ and $MC = .5Q$. Profit maximizing output and price are
    a. 11.1, $22.00   c. 40, $20.00
    b. 22.2, $55.60   d. 44.4, $12.20

____ 44. A monopoly faces market demand of P = 100 - 2Q and MR = 100 - 4Q. Its TC = $.25Q^2$ and MC = .5Q. The firm's profit is
    a. $62.16   c. -$1500.42, a loss
    b. $548.88   d. $1110.00

____ 45. A monopoly faces market demand of P = 100 - 2Q and MR = 100 - 4Q. Its TC = $.25Q^2$ and MC = .5Q. The deadweight loss due to monopoly is
    a. $983.46   c. $788.54
    b. $886.00   d. $394.27

____ 46. Who bought 90 head of cattle from Professor Holmes' farmer friend?
    a. Kevin Spacey   c. Wayne Gretzsky
    b. John Lennon   d. Don Cherry