

Sample Midterm Exam II

Sample Exam Problems Related to Chapter 2
(Source: Fall 2008 Midterm Exam, ECO 5315)

1. Total profit is maximized when
 - A. marginal profit equals average profit.
 - B. marginal profit equals zero.
 - C. average profit equals zero.
 - D. average profit is maximized.
 - E. marginal profit is greater than average profit.

2. If marginal revenue is less than marginal cost at every level of output, a profit maximizing firm should
 - A. produce when the difference between marginal revenue and marginal cost is greatest.
 - B. produce when total revenue is maximized.
 - C. produce when the difference between total revenue and marginal cost is maximized.
 - D. produce when the difference between average revenue and average cost is equal to 1.
 - E. not produce any output.

Sample Midterm Exam II

3. Shag Express, a retailer of lamps, has determined that its total cost of retailing lamps is $TC = 200 + 10Q + 5Q^2$. At 10 units of output, the firm's marginal cost is
- A. \$110.
 - B. \$100.
 - C. \$800.
 - D. \$230.
 - E. \$10.
4. Fox's Fine Furs (FFF) estimates that its total cost of production is $TC = 125 + 100Q + 25Q^2$. Furs sell for \$1,100 each. To maximize profits, FFF should sell
- A. 8 furs.
 - B. no furs.
 - C. 20 furs.
 - D. 38 furs.
 - E. 22 furs.

Sample Midterm Exam II

5. The demand for answering machines is $Q = 1,000 - 150P + 25I$. Assume that per capita disposable income I is \$200. When the price of answering machines is $P = \$10$, the income elasticity of demand is
- A. 2.5.
 - B. 0.11.
 - C. 1.0.
 - D. 25.
 - E. 1.11.
6. In Russia, as per capita income rises from \$1,980 to \$2,020, everything else remaining constant, annual per capita consumption of vodka falls from 525 to 475 liters; this implies an income elasticity of demand for vodka of
- A. -0.50.
 - B. -5.0.
 - C. 2.0.
 - D. 5.0.
 - E. 0.50.

Sample Midterm Exam II

7. A manufacturer of infant clothes has found that the demand for its product is given by $Q = 100P^{-1.25}A^{0.5}$, where P is price and A is advertising expenditures. The price elasticity of demand for these infant clothes is
- A. -0.8.
 - B. -1.25.
 - C. -1.0.
 - D. -2.5.
 - E. -0.5.
8. The demand for cough medicine is $Q = 10 - 2P$. At a price of \$2.50, the price elasticity of demand is
- A. -2.0.
 - B. -1.0.
 - C. -2.5.
 - D. -0.4.
 - E. -1.5.

Sample Midterm Exam II

9. The price elasticity of demand for Portland Cement at a local retail outlet is -3 at the current price of \$3. If the marginal cost is \$2, then the store manager should
- A. increase the price to \$4.
 - B. lower the price to \$2.75.
 - C. quit selling cement.
 - D. leave the price unchanged.
 - E. lower the price to \$2.50.

Sample Exam Problems Related to Chapter 4
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10. A production function is a table, a graph, or an equation showing the
- A. least-cost method of producing output.
 - B. optimal combination of inputs.
 - C. maximum output that can be achieved from specified levels of inputs.
 - D. combinations of inputs that can be produced with equal costs.
 - E. optimal production technology that a firm should employ.

Sample Midterm Exam II

11. When average product is at a maximum, marginal product is
- A. zero.
 - B. increasing.
 - C. equal to average product.
 - D. greater than average product.
 - E. less than average product.
12. The law of diminishing marginal returns states that
- A. the marginal product of labor declines as all inputs are increased.
 - B. production functions exhibit decreasing returns to scale.
 - C. the marginal product of labor returns as more capital is used.
 - D. the marginal product of a factor eventually diminishes as more of the input is used, holding other inputs fixed.
 - E. the marginal product of a factor always diminishes as more of the input is used, holding other inputs fixed.

Sample Midterm Exam II

13. If output is produced according to $Q = (KL)^{3/4}$, then this production process exhibits
- A. increasing returns to scale.
 - B. decreasing returns to scale.
 - C. first increasing and then decreasing returns to scale.
 - D. constant returns to scale.
14. An isoquant represents combinations of inputs that
- A. produce the same level of output.
 - B. produce increasing amounts of output.
 - C. minimize costs.
 - D. maximize output.
 - E. create wealth.

Sample Midterm Exam II

15. The marginal rate of technical substitution between two inputs
- A. shows the rate at which one input can be traded for another, holding output constant.
 - B. shows the efficient combination of inputs.
 - C. increases as we move down an isoquant.
 - D. shows the rate at which output can be increased by using more of both inputs.
 - E. shows the rate at which output decreases when using less of one of the inputs.
16. Lines that represent bundles of inputs that cost the same total amount are called
- A. total cost curves.
 - B. isocost curves.
 - C. cost curves.
 - D. isoquants.
 - E. isoprofit curves.

Sample Midterm Exam II

17. If output is produced according to $Q = 3K + 4L$, then this production process exhibits
- A. increasing returns to scale.
 - B. decreasing returns to scale.
 - C. first increasing and then decreasing returns to scale.
 - D. constant returns to scale.
 - E. first decreasing and then increasing returns to scale.
18. If output is produced according to $Q = 4LK$ (L is the quantity of labor input and K is the quantity of capital input), the price of K is \$10, and the price of L is \$5, then the cost minimizing combination of K and L capable of producing 32 units of output is
- A. $L = 8$ and $K = 1$.
 - B. $L = 4$ and $K = 2$.
 - C. $L = 2$ and $K = 2$.
 - D. $L = 2$ and $K = 4$.
 - E. $L = 1$ and $K = 8$.

Sample Midterm Exam II

Sample Exam Problems Related to Chapters 5 and 6

19. The addition to total cost resulting from the addition of the last unit of output is known as
- marginal product.
 - average product.
 - average variable cost.
 - average total cost.
 - marginal cost.
20. The long-run average cost curve slopes downward if there are
- some factors without diminishing marginal returns.
 - economies of scope in the management of multiplant operations.
 - economies of scale.
 - diseconomies of scope in the management of multiplant operations.
 - no factors without diminishing marginal returns.

Sample Midterm Exam II

21. The long-run average cost curve slopes upward if there are
- some factors without diminishing marginal returns.
 - diseconomies of scope in the management of multiplant operations.
 - economies of scale.
 - diseconomies of scale.
 - no factors without diminishing marginal returns.
22. Average variable cost is equal to the
- change in total variable cost divided by the change in output levels.
 - total variable cost divided by the level of output.
 - marginal cost divided by the average product of the variable input.
 - marginal cost divided by the marginal product of the variable input.
 - total variable cost divided by the change in output levels.
23. Minimum efficient scale is the output at which
- long-run average cost is first minimized.
 - long-run average cost first equals long-run marginal cost.
 - short-run average cost equals long-run average cost for the first time.
 - short-run marginal cost equals long-run marginal cost for the first time.
 - diseconomies are first overcome and then economies of scale set in.

Sample Midterm Exam II

24. If total cost is given by $TC = 10Q - 5Q^2 + 0.1Q^3$, then average cost is minimized at _____ units of output.

- a. 0.5
- b. 0.01
- c. 50
- d. 25
- e. 0.1

25. In the model of perfect competition, there are

- A. high barriers to entry and no nonprice competition.
- B. low barriers to entry and some advertising and product differentiation.
- C. very high barriers to entry and some advertising and product differentiation.
- D. high barriers to entry and some advertising and product differentiation.
- E. low barriers to entry and no nonprice competition.

Sample Midterm Exam II

26. A representative firm with short-run total cost given by $TC = 50 + 2q + 2q^2$ operates in a competitive industry where the short-run market demand and supply curves are given by $QD = 1,410 - 40P$ and $QS = -390 + 20P$. Its short-run profit maximizing level of output is
- A. 0 units.
 - B. 1 unit.
 - C. 2 units.
 - D. 5 units.
 - E. 7 units.
27. If a representative firm with long-run total cost given by $TC = 50 + 2q + 2q^2$ operates in a competitive industry where the short-run market demand and supply curves are given by $QD = 1,410 - 40P$ and $QS = -390 + 20P$, its long-run profit maximizing level of output is
- A. 0 units.
 - B. 1 unit.
 - C. 2 units.
 - D. 5 units.
 - E. 7 units.

Sample Midterm Exam II

28. If a representative firm with long-run total cost given by $TC = 50 + 2q + 2q^2$ operates in a competitive industry where the market demand is given by $QD = 1,410 - 40P$, the long-run equilibrium output of the industry will be
- A. 490 units.
 - B. 530 units.
 - C. 570 units.
 - D. 610 units.
 - E. 650 units.

Sample Exam Problems Related to Chapters 7 and 10

29. Maximum profit occurs wherever
- A. the slope of the total revenue function equals marginal revenue.
 - B. the slope of the total revenue function equals marginal cost.
 - C. the slope of the total revenue function is maximized.
 - D. the total revenue is maximized.
 - E. none of the above.

Sample Midterm Exam II

30. If a monopolist faces a constant elasticity of demand curve given by $Q = 400P^{-2}$ and has total costs given by $TC = 0.625Q^2$, its profit maximizing level of output is
- A. 0.
 - B. 2.
 - C. 4.
 - D. 6.
 - E. 8.
31. If elasticity of demand is -2, marginal cost is \$4, and average cost is \$6, the price at which profit is maximized is
- A. \$4.
 - B. \$6.
 - C. \$8.
 - D. \$10.
 - E. \$12.

Sample Midterm Exam II

32. If Gulfstream and Bombardier, both producers of upscale jet airplanes, were to collude rather than compete, consumers could expect
- A. higher prices and lower quantities offered for sale.
 - B. lower prices and lower quantities offered for sale.
 - C. higher prices and higher quantities offered for sale.
 - D. each firm to cheat on the cartel agreement.
 - E. one firm to emerge as the price leader in the oligopoly.

Use the following information to answer questions 33-35.

Suppose duopolists in the market for spring water share a market demand curve given by $P = 50 - 0.02Q$, where P is the price per gallon and Q is thousands of gallons of water per day. The marginal cost of producing water is zero for both firms.

33. If firm A produces zero, firm B 's best response is producing
- A. 0 gallons of water per day.
 - B. 48 gallons of water per day.
 - C. 833 gallons of water per day.
 - D. 1,250 gallons of water per day.
 - E. 2,500 gallons of water per day.

Sample Midterm Exam II

34. Optimal output for Cournot duopolists moving simultaneously is
- A. 0 gallons of water per day per firm.
 - B. 625 gallons of water per day per firm.
 - C. 833 gallons of water per day per firm.
 - D. 1,250 gallons of water per day per firm.
 - E. 2,500 gallons of water per day per firm.
35. If one firm acts as a first mover, the second firm will produce
- A. 0 gallons of water per day per firm.
 - B. 625 gallons of water per day.
 - C. 833 gallons of water per day.
 - D. 1,250 gallons of water per day.
 - E. 2,500 gallons of water per day.