Chapter 8 Practice

Multiple Choice

1. One characteristic of perfect competition is:
    a. a differentiated product.
    b. many firms.
    c. restricted entry.
    d. preferred access to resources.

2. In a perfectly competitive industry, individual firms act as:
    a. price makers.
    b. a single, cooperative entity.
    c. profit minimizers.
    d. price takers.

3. A perfectly competitive firm will always maximize its profit or minimize its loss by:
    a. setting marginal cost equal to marginal revenue in order to determine the optimal quantity of output.
    b. setting marginal cost above average cost.
    c. setting total cost minus total revenue at its maximum level.
    d. creating a unique product.

4. Sunk costs:
    a. will not affect any aspect of decision making by a competitive firm in the short run.
    b. are costs that can only be controlled by reducing labor input.
    c. affect the shutdown price in that higher sunk costs raise the shutdown price.
    d. do not affect the profit or losses of a firm.

5. When the average variable cost curve is "u-shaped" and not everywhere upward or downward sloping, marginal cost will:
    a. never intersect the average variable cost curve.
    b. never equal marginal revenue.
    c. intersect or "bisect" the average variable cost curve at its minimum.
    d. always be increasing.

6. Which of the following is *not* a characteristic of perfect competition?
    a. The industry is fragmented.
    b. Firms produce undifferentiated products.
    c. Consumers have imperfect information.
    d. Firms have equal access to resources.

7. An industry in which any potential entrant has access to the same technology and inputs as existing firms is said to be characterized by:
    a. open entry.
    b. restricted entry.
    c. free entry.
    d. profitable entry.

8. Which of the following is *not* an assumption of a perfectly competitive market?
    a. Fragmented industry
    b. Differentiated product
    c. Perfect information
    d. Equal access to resources

9. Which of the following will *not* be true of a perfectly competitive market?
    a. Each individual buyer or seller has an imperceptible effect on the market price.
    b. A new firm may incur a cost upon entering a market but has access to the same technology and inputs as established firms.
    c. Different consumers may pay different prices for the same product.
    d. Buyers and sellers take the market price as given when making purchasing or production decisions.

10. Suppose Joe starts his own business. In the first year the business earns $100,000 in revenue and incurs $85,000 in explicit costs. In addition, Joe has a standing offer to come work for his brother for $40,000 per year. Joe's accounting profit is _____ and Joe's economic profit is _____.
    a. -$25,000 and $15,000
    b. $15,000 and $65,000
    c. $15,000 and $60,000
    d. $15,000 and -$25,000

11. Suppose that for last year, Sarah's small business earned an accounting profit of $70,000 and an economic profit of $20,000. What can we correctly infer about Sarah's business?
    a. The difference between Sarah's total opportunity costs and her accounting costs is $50,000.
    b. Sarah's explicit costs were $50,000
    c. Sarah's total opportunity cost of her resources was $50,000.
    d. Sarah's firm cannot be maximizing profit.

12. A short-run market supply curve in a competitive industry is derived by:
    a. multiplying the quantity supplied by each identical firm in the industry times the number of firms at each relevant price.
    b. multiplying the quantity supplied by each differentiated firm in the industry times the number of firms at each relevant price.
    c. adding market supply and market demand at each relevant price.
    d. not usually upward sloping.

13. Characteristics of a short-run perfectly competitive equilibrium always include:
    a. zero profits.
    b. the condition that marginal cost is greater than average cost.
    c. the condition that homogeneous firms are producing the same level of output.
    d. the condition that sunk costs are zero.

14. Suppose a $1 tax is levied on each unit of output in a perfectly competitive industry, we know that:
    a. the number of firms in the industry will increase in the long run as long as the demand curve is downward sloping.
    b. the number of firms in the industry will decrease in the long run as long as the demand curve is downward sloping.
    c. firms will no longer produce at the bottom of the average cost curve in long run equilibrium.
    d. firms will no longer produce at the top of the average cost curve in long run equilibrium.

15. A decreasing-cost industry is characterized by:
    a. more firms than an increasing-cost industry.
    b. some type of economies of scale.
    c. accounting profit net of the minimum return on invested capital demanded by the firm's investors.
    d. some type of diseconomies of scale.

16. Suppose that, at the current level of output, a firm in a perfectly competitive market is producing at a level such that price exceeds marginal cost, $P > MC$. Marginal cost is normally shaped (U-shaped). The firm:
    a. is currently maximizing profit since it is charging a price higher than marginal cost.
    b. could increase profit by lowering the level of output.
    c. could increase profit by increasing the level of output.
    d. cannot increase profit without raising price.

17. Which of the following statements about marginal revenue for a perfectly competitive firm is incorrect, where TR stands for total revenue, P stands for price, and q stands for output?
    a. $MR = \frac{\Delta TR}{q}$
    b. $MR = P$
    c. $MR = \frac{\Delta TR}{\Delta q}$
    d. Marginal revenue is the rate at which total revenue changes with respect to changes in output.

18. $STC = 200 + 2q + 4q^2$ where q is output. Sunk fixed costs are 56 and nonsunk fixed costs are 144. What is the minimum level of average nonsunk cost?
    a. 6
    b. 50
    c. 56
    d. 144

19. Which of the following does not represent a profit-maximizing condition for a firm operating in a perfectly competitive industry?
    a. $P = MC$.
    b. $MC = MR$.
    c. MC must be increasing.
    d. MC must be falling.

20. A fixed cost that the firm cannot avoid if it shuts down and produces zero output must be:
    a. an accounting cost.
    b. a marginal cost.
    c. an equilibrium cost.
    d. a sunk cost.

21. Which of the following is an example of a fixed cost that is also a sunk cost for a bakery as of January 15?
    a. The electric bill for the coming calendar year.
    b. An accountant's fees for tax preparation in April.
    c. The cost of a one-year lease on a building, signed January 1.
    d. The salary of the baker for the month of February.

22. The short-run supply curve for a firm operating in perfect competition is:
    a. the firm's marginal cost curve.
    b. the firm's average variable cost curve.
    c. the firm's average variable cost curve above marginal cost.
    d. the firm's marginal cost curve above the shut down price.

23. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100\,q + 100q^2$ where q is output. Suppose that sunk costs are 75 and nonsunk costs are 25. What is the equation of an individual firm's short-run supply curve?
    a. $q = {}^{P}/_{200} - .5$ for *P≥100, and q=0 otherwise*.
    b. $q = {}^{P}/_{100} - .5$ for *P≥200, and q=0 otherwise*.
    c. $P = 100 + 200q$
    d. $q = {}^{P}/_{200} - .5$for *P ≥200, and q=0 otherwise*.

24. A perfectly competitive firm's short-run supply curve is determined by the equation:
    a. *P= AC where* $P \geq SMC$. Otherwise, supply is zero.
    b. *P=AVC* where $P \geq SMC$. Otherwise, supply is zero.
    c. *P=SMC* where $P \geq AC$. Otherwise, supply is zero.
    d. $P = SMC$ where $P \geq AVC$ or $P \geq ANSC$ or$P \geq SAC$, depending on the level of sunk costs. Otherwise, supply is zero.

25. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100\,q + 100q^2$ where q is output. What is the equation of the firm's average variable cost curve?
    a. $AVC = 100/q + 100 + 100q$.
    b. $AVC = 100 + 100q$.
    c. $AVC = 100 + 200q$.
    d. $AVC = 100/q$.

26. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100q + 100q^2$ where q is output. What is the minimum level of average variable costs?
    a. *AVC = 200*.
    b. *AVC = 0*.
    c. *AVC = 100*.
    d. *AVC = P*.

27. If $STC = 200 + 2q + 4q^2$ where q is output, what is the minimum level of average variable cost?
    a. 0
    b. 2
    c. 6
    d. 8

28. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100q + 100q^2$ where q is output with SFC = 100. What is the equation of an individual firm's short-run supply curve in this market?
    a. $q = {}^{P}/_{200} - .5$
    b. $q = {}^{P}/_{100} - .5$
    c. $P = 100 + 200q$
    d. $q = {}^{P}/_{200} - .5$for $P \geq 100$, and $q=0$ otherwise.

29. If $STC = 200 + 2q + 4q^2$ where q is output and all fixed costs are sunk, the firm's short-run supply curve is:
    a. $s(P) = 2 + 8q$ for $P \geq 2$ and zero otherwise.
    b. $s(P) = \begin{cases} 0 \text{ if } P < 2 \\ 0.125P - 0.25 \text{ if } P \geq 2 \end{cases}$
    c. $s(P) = 2 + 8q$ for $P \geq 0$ and zero otherwise.
    d. $s(P) = \begin{cases} 0 \text{ if } P < 0 \\ 0.125P - 0.25 \text{ if } P \geq 0 \end{cases}$

30. For a perfectly competitive firm, $STC = 100 + 20q + q^2$ where q is output. Suppose all fixed costs are sunk. If the market price is equal to 40, at what level of output should the firm operate to maximize profit in the short run?
    a. 10
    b. 20
    c. 30
    d. 40

31. For a perfectly competitive firm, $STC = 100 + 20q + q^2$. If the market price is equal to 40, what is the maximum profit the firm can earn?
    a. 400
    b. 200
    c. 100
    d. 0

32. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100\,q + 100q^2$ where q is output. Suppose that sunk costs are 75 and nonsunk costs are 25. What is the equation of an individual firm's average nonsunk cost curve?
    a. $ANSC = 100 + 100q$
    b. $ANSC = 100 + 100q + 25/q$
    c. $ANSC = 25/q$
    d. $ANSC = 100 + 200q + 25/q$

33. Sometimes a firm will continue to operate even if that firm incurs short-run negative profits (losses). Which of the following characterizes this situation?
    a. $P = MC = AC$.
    b. $P = MC = AVC$.
    c. $P = MC$ where $P > AVC$ but $P < AC$.
    d. $P = MC$ where $P > AC$ but $P < AVC$.

34. The short-run market supply curve is derived by _____ supplied of the individual firm supply curves.
    a. vertically summing the prices and quantities
    b. horizontally summing the prices and quantities
    c. vertically summing the quantities
    d. horizontally summing the quantities

35. The market for sweet potatoes consists of 1,000 identical firms. Each firm has a short-run total cost curve of $STC = 100 + 100\ q + 100q^2$ where q is output. All fixed costs are sunk. What is the equation of the short-run market supply curve?
    a. $Q^s = 5P\text{-}500$ for $P \geq 100$, and $Q^s = 0$ otherwise.
    b. $P = 100000 + 200000q$, $P \geq 200$, and $Q^s = 0$ otherwise.
    c. $Q^s = P/200 - .5$ for $P \geq 100$, and $Q^s = 0$ otherwise.
    d. $Q^s = 5P\text{-}500$ for $P \geq 200$, and $Q^s = 0$ otherwise.

36. The market for sweet potatoes consists of 1,000 identical firms. The market demand curve is given by $Q^d = 1000 - 5P$. Each firm has a short-run total cost curve of $STC = 100 + 100\ q + 100q^2$ where q is output. All fixed costs are sunk. In short-run market equilibrium, each individual firm will:
    a. earn a short-run profit.
    b. earn a short-run loss.
    c. earn zero economic profit.
    d. produce an output of $q = 4$.

37. Suppose that the tricorder industry is perfectly competitive. The firm of JL Picard is making a short-term economic profit. The firm of WT Riker decides to enter the tricorder industry. However, when the WT Riker firm enters the industry, it bids up some input prices. For this industry, we will likely observe a(n):
    a. upward-sloping long-run market supply curve.
    b. downward-sloping long-run market supply curve.
    c. horizontal long-run market supply curve.
    d. vertical long-run market supply curve.

38. Which of the following is *not* true in a long-run perfectly competitive equilibrium?
    a. $P = MC$, where P is market price and MC is the marginal cost of a firm.
    b. $P = AC$, where P is market price and AC is the average cost of a firm.
    c. $Q^d = nq$, where q is the supply of an individual firm, n is the number of firms in the industry, and Q^d is the market demand for a product.
    d. Firms may earn negative profits.

39. In the long run, free entry drives the market price to the minimum level of _____, and each firm supplies a quantity equal to its _____.
    a. long-run average cost; price
    b. marginal cost; minimum efficient scale
    c. long-run average cost; minimum efficient scale
    d. marginal cost; price

40. In a constant cost industry, which of the following statements is true?
    a. The long run market supply curve and the long run firm supply curve are both horizontal.
    b. While the long run market supply curve is horizontal, the long run firm supply curve generally is upwards sloping.
    c. The long run market supply curve and the long run firm supply curve are both upwards sloping.
    d. While the long run market supply curve is upwards sloping, the long run firm supply curve is horizontal.

41. In an increasing cost industry, the long-run market supply curve is:
    a. downward sloping
    b. horizontal
    c. upward sloping
    d. vertical

42. Each firm in a perfectly competitive market has long run average cost represented as $AC(q) = 100q - 10 + 100/q$. Long run marginal cost is $MC = 200q - 10$. The market demand is $Q^d = 2150 - 5P$. Find the long run equilibrium output per firm, q^*, the long run equilibrium price, P^*, and the number of firms in the industry, n^*.
    a. $q^* = 1; P^* = 190; n^* = 1200$
    b. $q^* = 2; P^* = 240; n^* = 1200$
    c. $q^* = 50; P^* = 15; n^* = 200$
    d. $q^* = 100; P^* = 9991; n^* = 500$

True/False

43. In a perfectly competitive industry, individual firms act as price makers.

44. In a perfectly competitive industry, individual firms act as a single, cooperative entity.

45. In a perfectly competitive industry, individual firms act as profit minimizers.

46. In a perfectly competitive industry, individual firms act as price takers.

47. Sunk costs will not affect any aspect of decision making by a competitive firm in the short run.

48. Sunk costs are costs that can only be controlled by reducing labor input.

49. Sunk costs affect the shutdown price in that higher sunk costs raise the shutdown price.

50. Sunk costs do not affect the profit or losses of a firm.

51. A characteristic of a perfectly competitive market is that products are undifferentiated. That is, consumers perceive products to be identical.

52. Equal access to resources is a condition in which all firms, including prospective entrants, have access to the same technology and inputs.

53. Each individual buyer or seller has an imperceptible effect on the market price.

54. A new firm may incur a cost upon entering a market but has access to the same technology and inputs as established firms.

55. Different consumers may pay different prices for the same product.

56. Buyers and sellers take the market price as given when making purchasing or production decisions.

57. A firm can earn a positive accounting profit but a negative economic profit.

58. Opportunity cost is included in the definition of economic profit but not in the definition of accounting profit.

59. A profit-maximizing firm never produces where $P < AVC$.

60. A profit-maximizing firm never produces where $P < AC$.

61. In a long-run perfectly competitive equilibrium, $P = MC$, where P is market price and MC is the marginal cost of a firm.

62. In a long-run perfectly competitive equilibrium, $P = AC$, where P is market price and AC is the average cost of a firm.

63. In a long-run perfectly competitive equilibrium, $Q^d = nq$, where q is the supply of an individual firm, n is the number of firms in the industry, and Q^d is the market demand for a product.

64. In a long-run perfectly competitive equilibrium, firms may earn negative profits.

65. In a constant cost industry, the long run market supply curve and the long run firm supply curve are both horizontal.

66. In a constant cost industry, while the long run market supply curve is horizontal, the long run firm supply curve generally is upwards sloping.

67. In a constant cost industry, the long run market supply curve and the long run firm supply curve are both upwards sloping.

68. In a constant cost industry, while the long run market supply curve is upwards sloping, the long run firm supply curve is horizontal.

69. For an entire perfectly competitive industry, in the long run, economic profit for the industry equals zero.

70. For an entire perfectly competitive industry, in the long run, economic profit equals total revenues minus total costs.

Answers

Multiple Choice

1. b
2. d
3. a
4. a
5. c
6. c
7. c
8. b
9. c
10. d
11. a
12. a
13. c
14. b
15. b
16. c
17. a
18. b
19. d
20. d
21. c
22. d
23. d
24. d
25. b
26. c
27. b
28. d
29. b
30. a
31. d
32. b
33. c
34. d
35. a
36. b
37. a
38. d
39. b
40. c
41. c
42. a

True and False

43. False
44. False
45. False
46. True
47. True
48. False
49. False
50. False
51. True
52. True
53. True
54. True
55. False
56. True
57. True
58. True
59. True
60. False
61. True
62. False
63. True
64. False
65. False
66. True
67. False
68. False
69. True
70. True