

## MICROECONOMICS

### SECTION I

Time—70 minutes

60 Questions

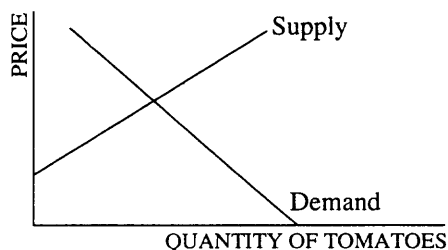
Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and then fill in the corresponding oval on the answer sheet.

1. The allocation of resources in a market economy is described by which of the following statements?
  - I. The government decides which goods will be produced and which consumers will receive them.
  - II. Buyers and sellers exchange goods and services on a voluntary basis.
  - III. Prices and costs help producers decide whether they are producing too little or too much of a good.

(A) I only  
(B) II only  
(C) III only  
(D) I and III only  
(E) II and III only
2. If the government imposes a tax on the production of cars, which of the following will occur in the market for cars?

(A) There will be a movement to the right along the supply curve.  
(B) There will be a movement to the right along the demand curve.  
(C) The supply curve will shift to the right.  
(D) The supply curve will shift to the left.  
(E) The demand curve will shift to the right.
3. Which of the following is true of a price floor?

(A) The intention of the government in creating the price floor is to assist the producers of the good.  
(B) To have an impact in the market for the good, the price floor should be set below the existing market price of the good.  
(C) An effective price floor will increase the quantity demanded of the good.  
(D) The price floor would tend to create a shortage of the good in the market.  
(E) The creation of the price floor would not change the quantity supplied of the good if the supply curve were upward-sloping to the right.



4. On the basis of the graph above, which of the following statements concerning changes in the demand for and supply of tomatoes is correct?
- (A) If both the demand and supply increase, the price of tomatoes will definitely increase.
- (B) If both the demand and supply decrease, the quantity of tomatoes sold will definitely increase.
- (C) If the demand decreases while the supply increases, the price of tomatoes will definitely increase.
- (D) If the demand decreases while the supply increases, the quantity of tomatoes sold will definitely decrease.
- (E) If the demand increases while the supply decreases, the price of tomatoes will definitely increase.
5. Which of the following best illustrates the concept of consumer surplus?
- (A) A thirsty athlete pays \$0.85 for a cold drink when she would have gladly paid \$1.50 for the drink.
- (B) An individual who is willing to accept a job at \$7.50 per hour is offered \$7.00 per hour.
- (C) An individual pays the sale price of \$15.00 for the same shirt that the individual refused to purchase earlier at \$18.00.
- (D) An individual finds that the price of artichokes, a food she dislikes, has been reduced by 50 percent.
- (E) A wood-carver has a marginal cost of \$5.00 for a unit of output, but sells that unit at \$6.00.

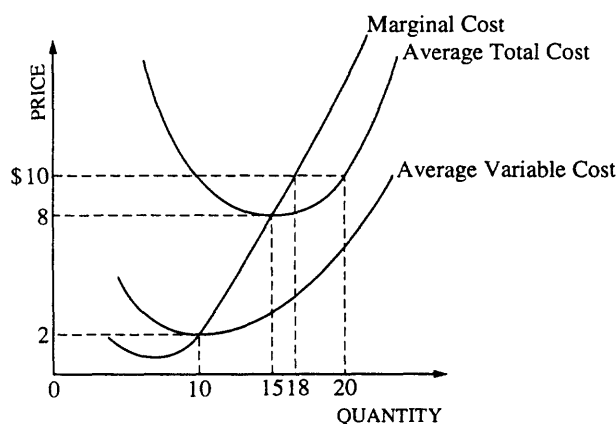
Questions 6-7 are based on the table below, which gives cost information for a perfectly competitive firm.

<u>Quantity</u>	<u>Average Fixed Costs</u>	<u>Average Variable Costs</u>	<u>Marginal Costs</u>
0			
1	\$100.00	\$55.00	\$55.00
2	50.00	45.00	35.00
3	33.33	50.00	60.00
4	25.00	55.00	70.00
5	20.00	60.00	80.00
6	16.67	65.00	90.00

6. The average total cost to the firm of producing 2 units of output is
- (A) \$ 35.00
- (B) \$ 85.00
- (C) \$ 95.00
- (D) \$100.00
- (E) \$130.00
7. If the product price is \$85, how many units of output must the firm produce in order to maximize profits?
- (A) 0
- (B) 3
- (C) 4
- (D) 5
- (E) 6

8. Which of the following factors can cause a firm's cost curves to shift upward?

(A) An increase in wages  
 (B) An increase in the firm's output  
 (C) An increase in the output price  
 (D) A decrease in the firm's output  
 (E) A decrease in the price of energy



9. The diagram above shows a perfectly competitive firm's short-run cost curves. If the price of the output increases from \$8 to \$10, the profit-maximizing firm will

(A) continue producing 15 units because average total cost is at a minimum  
 (B) continue producing 15 units because average total cost is equal to marginal cost  
 (C) increase output to 20 units because this is the output at which price equals average total cost  
 (D) increase output to 18 units because this is the output at which price equals marginal cost  
 (E) decrease output to 10 units because this is the output at which average variable cost is at a minimum

10. Which of the following statements is true about a firm that sells its output in a perfectly competitive market?

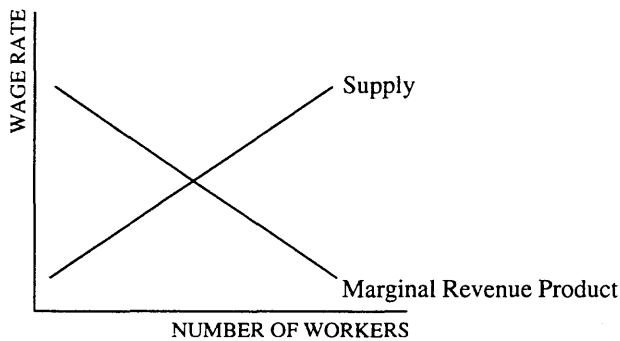
(A) The demand for its product is a downward-sloping function.  
 (B) The firm will earn zero economic profits in long-run equilibrium.  
 (C) Advertising is an important tool of the firm.  
 (D) The firm will increase its total economic profits if it charges a price that is lower than the market price.  
 (E) The marginal revenue the firm receives from selling an additional unit of output will be different from the price at which it sells that unit.

11. One justification for government regulation of a monopoly is that the unregulated monopoly

(A) earns a normal profit  
 (B) pays its workers a lower wage than if the market were competitive  
 (C) has a very elastic demand curve  
 (D) charges a price higher than a competitive market price  
 (E) sells too much of the product

12. Which of the following is most likely to shift the demand for aircraft mechanics to the right?

(A) An increase in the demand for air travel  
 (B) An increase in the price of a license necessary for aircraft mechanics  
 (C) A decrease in the price of a license necessary for aircraft mechanics  
 (D) A decrease in the demand for air travel  
 (E) A decrease in the marginal productivity of aircraft mechanics



13. The graph above shows the marginal revenue product curve and supply curve of labor for a firm. The introduction of new management techniques dramatically increases worker productivity. Which of the following changes is most likely to occur?

(A) The supply curve will shift to the left, increasing the wage rate.  
 (B) The supply curve will shift to the right, increasing employment.  
 (C) The marginal revenue product curve will shift to the right, increasing the wage rate.  
 (D) The marginal revenue product curve will shift to the left, reducing employment.  
 (E) Neither the marginal revenue product curve nor the supply curve will shift, but the wage will increase and employment will fall.

14. If the production of a good results in a positive externality, the government might be able to improve economic efficiency in this market by

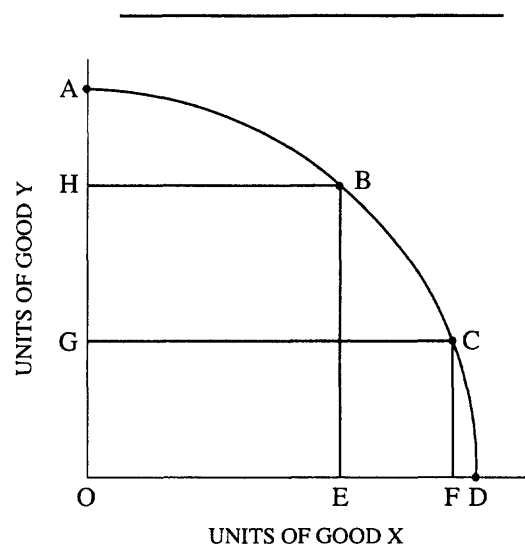
(A) eliminating private production of the good  
 (B) imposing a tax on private producers  
 (C) promoting the export of the surplus output  
 (D) initiating antitrust action  
 (E) granting a subsidy to private producers

15. All of the following are sources of inequality in the distribution of personal income EXCEPT

(A) progressive income taxes  
 (B) discrimination in employment  
 (C) differences in personal motivation  
 (D) differences in educational level attained  
 (E) differences in abilities

16. An outward shift in the production possibilities curve of an economy can be caused by an increase in

(A) unemployment  
 (B) the labor force  
 (C) inflation  
 (D) output  
 (E) demand

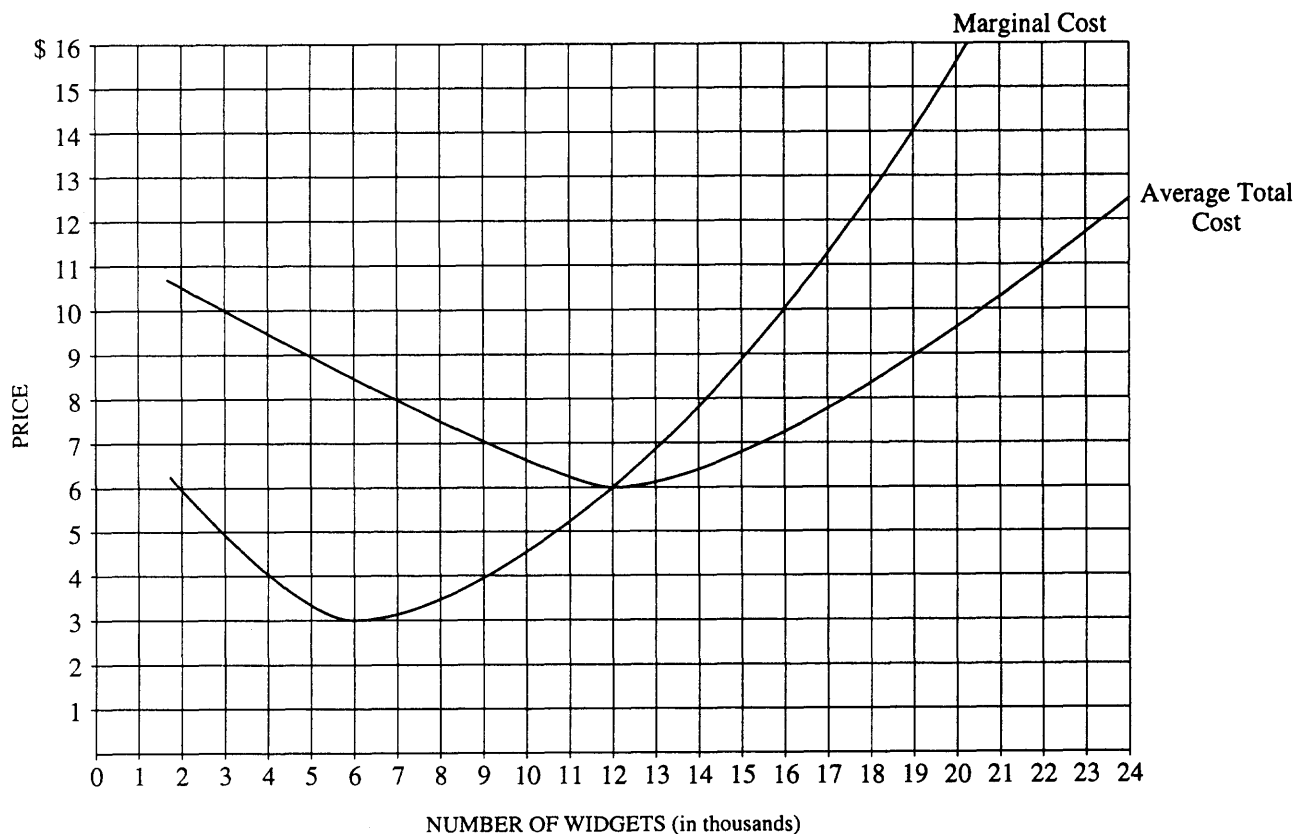


17. The graph above shows an economy's production possibilities frontier for the production of two goods, X and Y. Assume that the economy is currently at point B. The opportunity cost of moving from point B to point C is

(A) AH units of good Y  
 (B) HG units of good Y  
 (C) OG units of good Y  
 (D) EF units of good X  
 (E) OF units of good X

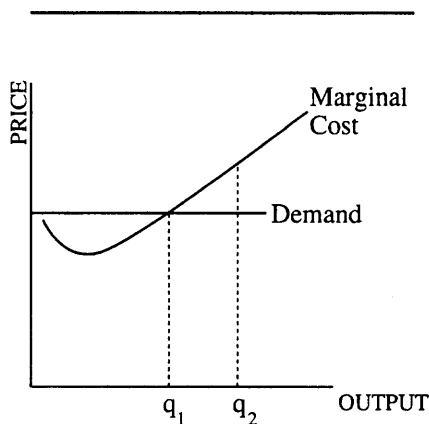
18. If the demand for potatoes increases whenever a person's income increases, then potatoes are an example of
- (A) an inferior good
  - (B) a free good
  - (C) a Giffen good
  - (D) a normal good
  - (E) a public good
19. The American Heart Association has just issued a report warning consumers about the negative health effects of eating beef. Which of the following changes in the beef market is most likely to occur as a result?
- (A) The supply curve will shift to the left, increasing the price of beef.
  - (B) The demand curve will shift to the left, decreasing the price of beef.
  - (C) The demand curve will shift to the right, increasing the price of beef.
  - (D) Neither the supply nor demand curve will shift; only quantity will increase as price decreases.
  - (E) Neither the supply nor demand curve will shift; only quantity will decrease as price increases.
20. Which of the following is most likely to increase the supply of soldiers for an all-volunteer army?
- (A) A decrease in the salaries paid to soldiers
  - (B) A decrease in the average wage rate in civilian employment
  - (C) A reduction in college tuition benefits provided to soldiers
  - (D) The imposition of new restrictions on women in the military
  - (E) An increase in the required length of service
21. If the increase in the price of one good decreases the demand for another, then the two goods are
- (A) inferior goods
  - (B) luxury goods
  - (C) normal goods
  - (D) substitute goods
  - (E) complementary goods
22. Which of the following is true about a firm's average variable cost?
- (A) It will rise if marginal cost is less than average variable cost.
  - (B) It will never equal the firm's marginal cost.
  - (C) It will decline when the firm's marginal product declines.
  - (D) It will be negative if marginal revenue declines.
  - (E) It will equal average total cost when fixed costs are zero.

Questions 23-24 refer to the graph below showing cost curves for a perfectly competitive firm.



23. At a market price of \$6, the profit-maximizing rate of output will result in
- (A) economic profits
  - (B) economic losses
  - (C) normal profits
  - (D) profits that are less than normal
  - (E) profits that are greater than normal
24. If the market price is \$10, how many widgets should this profit-maximizing firm produce?
- (A) 3,000
  - (B) 6,000
  - (C) 12,000
  - (D) 16,000
  - (E) 21,000

25. A competitive firm produces a product using labor and plastic. The firm is initially in equilibrium. If the cost of plastic suddenly increases, which of the following will occur?
- (A) The demand curve for the product will shift to the left.
  - (B) The firm's demand curve for plastic will shift to the left.
  - (C) The firm will increase the number of units offered for sale.
  - (D) The firm will definitely go out of business, since competitive firms earn zero economic profits in equilibrium.
  - (E) The firm's marginal costs will increase at each level of output.



26. Given the cost and demand schedules depicted above, if the firm increased output from  $q_1$  to  $q_2$ , it would
- (A) earn a normal profit
  - (B) experience an increase in profits
  - (C) experience a decline in profits
  - (D) increase revenues but not costs
  - (E) increase costs but not revenues

27. Which of the following are characteristics of a perfectly competitive industry?
- I. New firms can enter the industry easily.
  - II. There is no product differentiation.
  - III. The industry's demand curve is perfectly elastic.
  - IV. The supply curve of an individual firm in the industry is perfectly elastic.
- (A) I and II only
  - (B) I and III only
  - (C) II and IV only
  - (D) I, II, and IV only
  - (E) I, III, and IV only
28. The profit-maximizing output level produced by an unregulated monopoly is
- (A) the socially optimal output level, since the firm's marginal revenue equals its marginal cost
  - (B) greater than the socially optimal level, since the firm's marginal cost exceeds its marginal revenue
  - (C) greater than the socially optimal level, since the firm makes economic profits
  - (D) less than the socially optimal level, since the price paid by consumers exceeds the firm's marginal cost
  - (E) less than the socially optimal level, since the price of the product is less than the firm's marginal revenue

29. The wage rate is \$10 per hour and the last worker hired by the firm increased output by 100 units. Computers rent for \$100 per hour and the last computer rented by the firm increased output by 2,000 units. To minimize costs the firm should

- (A) hire more workers and rent more computers because the marginal revenue products of both workers and computers are greater than their respective prices
- (B) hire more workers and reduce the number of computers rented because workers are cheaper than computers
- (C) lay off workers and rent more computers because computers produce more output per dollar of additional expenditure
- (D) lay off workers and rent more computers because computers produce more output
- (E) keep the same number of workers and computers because the marginal revenue products of both workers and computers are positive

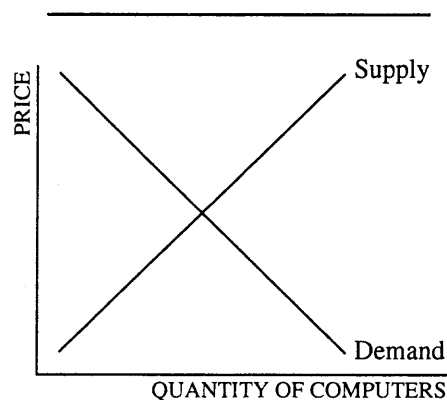
30. Imposing taxes that increase as a firm's pollution increases is often recommended by economists as a means to reduce pollution. The reason for this recommendation is that such taxes would likely

- (A) eliminate pollution completely
- (B) encourage firms to use the most efficient method to reduce pollution
- (C) increase the government's revenues
- (D) encourage firms to increase production
- (E) be paid out of firms' profits and not paid for by higher consumer prices

31. The opportunity cost of owning a business is equal to which of the following?

- I. The economic profits earned in the business
- II. The accounting profits earned in the business
- III. The profits that could be earned in another business using the same amount of resources

- (A) I only
- (B) II only
- (C) III only
- (D) I and III only
- (E) I, II, and III



32. The graph above shows the supply and demand curves for a particular brand of computers. In 1988, 10,000 computers were sold for \$1,000 each, but in 1989, 9,000 computers were sold for \$1,000 each. Which of the following changes in the supply and demand curves could most likely have caused this change?

- | <u>Demand Curve</u> | <u>Supply Curve</u> |
|---------------------|---------------------|
| (A) Shift right     | Shift right         |
| (B) Shift right     | Shift left          |
| (C) No change       | Shift left          |
| (D) Shift left      | Shift left          |
| (E) Shift left      | No change           |



33. If the minimum wage for teen-agers increased to a rate higher than their market equilibrium wage, what would be the effect on their wage and employment?

<u>Wage</u>	<u>Employment</u>
(A) Increase	No effect
(B) Increase	Increase
(C) Increase	Decrease
(D) Decrease	Increase
(E) Decrease	Decrease

34. If a store raises its prices by 20 percent and its total revenue increases by 10 percent, the demand it faces in this price range must be

- (A) inelastic  
(B) elastic  
(C) unit elastic  
(D) perfectly elastic  
(E) perfectly inelastic

35. In which of the following market structures is it sometimes assumed that rival firms will match price decreases but not match price increases?

- (A) Perfect competition  
(B) Oligopoly  
(C) Natural monopoly  
(D) Monopolistic competition  
(E) Monopoly

36. A farmer produces peppers in a perfectly competitive market. If the price falls, in the short run the farmer should

- (A) increase production until the new price equals average revenue  
(B) increase production to offset the fall in price  
(C) discontinue production if the new price is less than marginal revenue  
(D) continue to produce only if the new price covers average fixed costs  
(E) continue to produce only if the new price covers average variable costs

37. Which of the following is true if a perfectly competitive market is in long-run equilibrium?

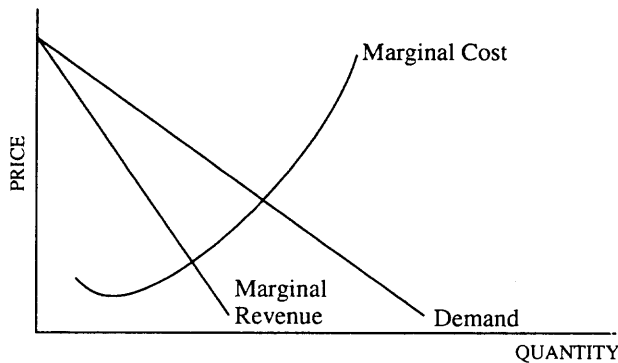
- (A) Market price will eventually decrease.  
(B) New firms will enter the industry.  
(C) Marginal revenue is equal to average total cost.  
(D) Price is not equal to marginal revenue.  
(E) Average variable costs are decreasing.

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		UNITS OF OUTPUT		
		Units of Capital		
		1	2	3
Units of Labor	1	100	140	160
	2	140	200	240
	3	160	240	300

38. The table above shows the various units of output that can be produced with different combinations of capital and labor. Which of the following statements is correct according to the information in the table?

- (A) In the long run, there are constant returns to scale.  
(B) In the long run, there are increasing returns to scale.  
(C) In the short run, the marginal product of capital is constant.  
(D) In the short run, the marginal product of labor is constant.  
(E) In the short run, the law of diminishing marginal returns does not hold.



39. The graph above shows a firm's cost and revenue curves. This profit-maximizing firm will
- (A) produce where demand is inelastic
  - (B) charge a higher price than that necessary to maximize revenues
  - (C) have many profit-maximizing price and quantity combinations
  - (D) be unable to increase sales and total revenues by lowering its price
  - (E) never have a region of falling average total cost
40. Which of the following is necessarily true of the profit-maximizing equilibrium of a monopolist who sets a single price?
- (A) Price equals average total cost.
  - (B) Price is greater than marginal cost.
  - (C) Average total cost is at its minimum level.
  - (D) Marginal revenue is greater than marginal cost.
  - (E) Marginal cost is minimized.

<u>Number of Workers</u>	<u>Number of Sandwiches Produced per Day</u>
1	80
2	150
3	200
4	240
5	250
6	230
7	200

41. Given the production information in the table above, how many workers would be employed if the wage rate were \$20.00 per day and if sandwiches sold for \$0.50?
- (A) 1
  - (B) 2
  - (C) 4
  - (D) 5
  - (E) 7
42. Which of the following is true when the production of a good results in negative externalities?
- (A) The government must produce the good.
  - (B) The private market will produce too little of the good.
  - (C) The private market price will be too low.
  - (D) The government must prevent the production of the good.
  - (E) Private firms will not be able to maximize profits.

43. In the long run, a monopolistically competitive firm is allocatively inefficient because the firm will
- (A) produce only when marginal cost is greater than marginal revenue
  - (B) produce only when marginal revenue is greater than marginal cost
  - (C) charge a price greater than the marginal cost
  - (D) earn positive economic profits
  - (E) experience economic losses

44. A change in which of the following will NOT cause a shift in the demand curve for a factor of production?

- (A) Demand for the goods produced by the factor
- (B) Prices of the goods produced by the factor
- (C) Prices of substitute factors
- (D) Supply of the factor
- (E) Supply of substitute factors

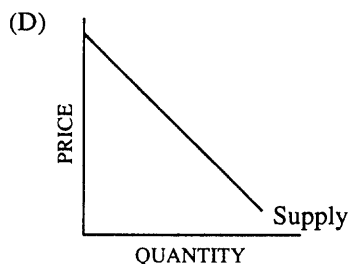
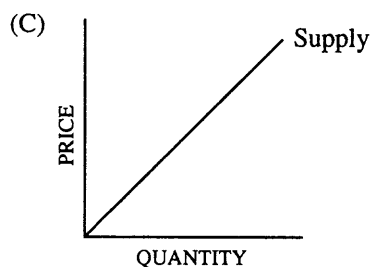
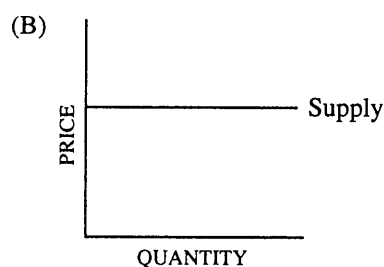
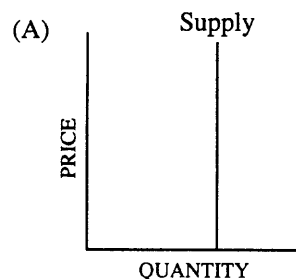
45. There are negative externalities associated with the use of a freeway in a major city at rush hour because during this time

- (A) drivers slow down other drivers because of the high traffic volume
- (B) drivers value their time more
- (C) government revenues from toll roads increase
- (D) revenues of bus companies increase
- (E) gasoline costs more

46. Economic growth can be depicted using a production possibilities curve by which of the following?

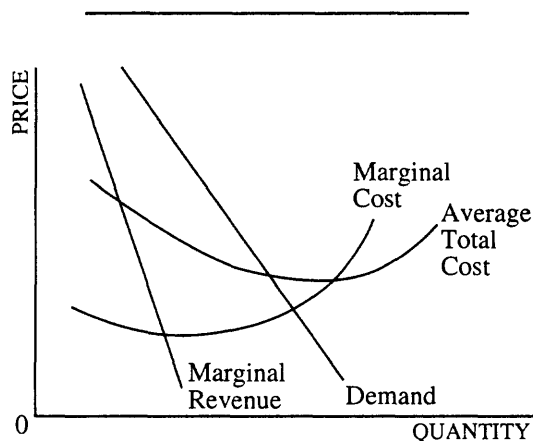
- (A) A rightward shift of the curve
- (B) A movement upward on an existing curve
- (C) A movement downward on an existing curve
- (D) A movement from a point outside the curve to a point on the curve
- (E) A movement from a point on the curve to a point inside the curve

47. If a one-of-a-kind Etruscan vase is offered for sale at an auction, which, if any, of the following correctly shows the supply curve for the vase?



- (E) It is impossible to determine the shape of the supply curve from the given information.

48. Which of the following will cause an unregulated monopolist to produce a more allocatively efficient level of output?
- (A) A tax based on the amount of profits
  - (B) A tax that does not change as output increases
  - (C) A tax that increases as output increases
  - (D) A subsidy that increases as output increases
  - (E) A subsidy that does not change as output increases



49. The graph above shows the cost and revenue curves for a natural monopoly. Consider the following two policies for regulating this natural monopoly.

Policy I: Require the monopoly to set quantity and price where demand equals marginal cost.

Policy II: Require the monopoly to set quantity and price where demand equals average total cost.

Which of the following is true of these policies?

- (A) Both would result in the same level of output and price.
- (B) Both would result in an inefficient allocation of resources relative to the unregulated result.
- (C) Policy I would result in a lower level of output than would Policy II.
- (D) Policy I would result in a higher price than would Policy II.
- (E) Policy I might require the payment of a subsidy to the firm.

50. Which of the following is true in the market for a certain product if producers consistently are willing to sell more at the going price than consumers are willing to buy?

- (A) Demand is highly inelastic.
- (B) Supply is highly elastic.
- (C) The product is inferior.
- (D) There is a price ceiling on the product.
- (E) There is a price floor on the product.

51. According to the theory of consumer behavior, which of the following decreases first as additional units of a product are consumed?

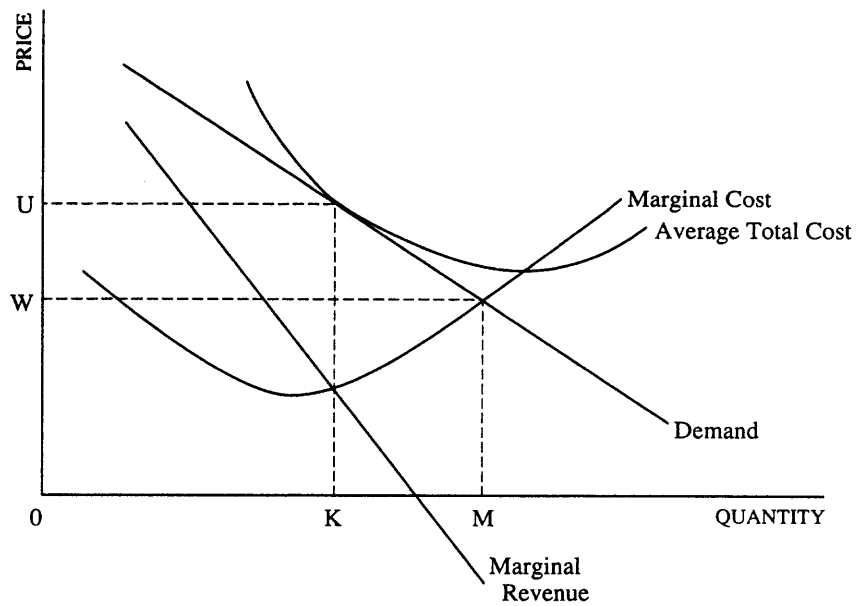
- (A) Total utility
- (B) Average utility
- (C) Marginal utility
- (D) Marginal physical product
- (E) Total physical product

52. Under which of the following circumstances is a firm experiencing economies of scale?

- (A) The firm increases only its labor input, and output decreases.
- (B) The firm doubles its inputs, and output triples.
- (C) The firm builds a new plant, and the average cost of production increases.
- (D) The firm hires a new plant manager, and profits increase.
- (E) The product price increases, and the firm increases its output.

53. Which of the following statements about cost is always true for both monopolies and perfectly competitive firms?

- (A) Average total cost equals marginal cost when average total cost is a minimum.
- (B) Marginal cost decreases as production increases.
- (C) Average fixed cost is equal to marginal cost when average fixed cost is a minimum.
- (D) Average variable cost is equal to marginal cost when marginal cost is a minimum.
- (E) Average variable cost decreases as production increases.



54. The graph above depicts cost and revenue curves for a typical firm in a monopolistically competitive industry. Suppose that the firm is producing  $OM$  units of output. To maximize profits, it should do which of the following to output and price?

<u>Output</u>	<u>Price</u>
(A) Increase	Decrease
(B) Increase	Increase
(C) Decrease	Increase
(D) Not change	Increase
(E) Not change	Not change

55. In most cases the supply curve for a perfectly competitive industry can be described as which of the following?
- (A) More elastic in the short run than in the long run
  - (B) More elastic in the long run than in the short run
  - (C) Downward sloping in the short run
  - (D) Perfectly inelastic in the long run
  - (E) Perfectly elastic in the short run
56. Compared with firms in a perfectly competitive industry, firms in a monopolistically competitive industry are inefficient because they
- (A) make economic profits in the long run
  - (B) do not lower the product price if input prices fall
  - (C) restrict their output level to maximize profits
  - (D) charge the highest price that consumers will pay
  - (E) waste resources by producing an excess amount of output
57. Which of the following is NOT a characteristic of monopolistically competitive markets?
- (A) Relatively easy market entry
  - (B) Differentiated products
  - (C) Substantial product advertising
  - (D) A large number of both buyers and sellers
  - (E) Long-run economic profits
58. Which of the following will happen in the labor market if the price of the good produced by the workers decreases?
- (A) The marginal product of labor will increase.
  - (B) The marginal product of labor will decrease.
  - (C) The marginal revenue product of labor will increase.
  - (D) The marginal revenue product of labor will decrease.
  - (E) The demand curve for labor will shift to the right.
59. Assume that a firm is hiring labor in a perfectly competitive labor market. If the marginal revenue product of labor is greater than the wage rate, which of the following will be true?
- (A) The firm must be losing money.
  - (B) The firm should employ more workers.
  - (C) The firm should replace workers with capital.
  - (D) The firm is maximizing its profits.
  - (E) The firm is experiencing diminishing marginal utility.
60. Which of the following is true of the marginal cost of providing a pure public good to one more consumer?
- (A) It is positive.
  - (B) It is equal to zero.
  - (C) It is equal to the original cost of the good.
  - (D) It decreases as the number of consumers increases.
  - (E) It increases as the number of consumers increases.

END OF SECTION I