Econ8500_Competitive_MKT_Study

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

_____ 1. In general, microeconomic theory assumes that firms attempt to maximize the difference between
   a. total revenues and accounting costs.
   b. price and marginal cost.
   c. total revenues and economic costs.
   d. economic costs and average costs.

_____ 2. A firm's total revenue is equal to
   a. total quantity produced times marginal cost.
   b. total quantity produced times market price.
   c. marginal revenue times total quantity produced.
   d. market price divided by total quantity produced.

_____ 3. A firm's marginal revenue is defined as
   a. the ratio of total revenue to total quantity produced.
   b. the additional output produced by lowering price.
   c. the additional revenue received due to technical innovation.
   d. the additional revenue received when selling one more unit of output.

_____ 4. In order to maximize profits, a firm should produce at the output level for which
   a. average cost is minimized.
   b. marginal revenue equals marginal cost.
   c. marginal cost is minimized.
   d. price minus average cost is as large as possible.

_____ 5. If demand is inelastic, marginal revenue will be
   a. positive.
   b. zero.
   c. negative.
   d. constant.

_____ 6. If a firm wishes to maximize total revenues it should produce where
   a. marginal cost is zero.
   b. marginal revenue is zero.
   c. marginal revenue is equal to marginal cost.
   d. marginal revenue is equal to price.

_____ 7. In order to maximize profits, a firm that can sell all it wants without affecting price should produce
   a. where average variable costs are minimized.
   b. where marginal cost is equal to average variable costs.
   c. where marginal cost is equal to price, if this price is larger than the shut-down price.
   d. where marginal cost is at a minimum.

_____ 8. If a firm is a price taker, its marginal revenue is
   a. equal to market price.
   b. less than market price.
   c. greater than market price.
   d. a multiple of market price that may be either greater than or less than one.

____ 9. If a firm's marginal revenue is below its marginal cost, an increase in production will usually
   a. increase profits.
   b. leave profits unchanged.
   c. decrease profits.
   d. increase marginal revenue.

____ 10. If the demand faced by a firm is inelastic, selling one more unit of output will
   a. increase revenues.
   b. decrease revenues.
   c. keep revenues constant.
   d. increase profits.

____ 11. If the demand faced by a firm is elastic, selling one less unit of output will
   a. increase revenues.
   b. decrease revenues.
   c. keep revenues constant.
   d. decrease price.

____ 12. If the demand curve a firm faces shifts to the right, usually
   a. it would be impossible to tell whether the marginal revenue curve shifts.
   b. the marginal revenue curve would shift to the left.
   c. the marginal revenue curve would shift to the right.
   d. the marginal revenue curve would not shift.

____ 13. A firm that sought to "maximize market share" would choose to produce an output level for which marginal revenue was equal to
   a. marginal cost.
   b. average cost.
   c. price.
   d. zero.

____ 14. The markup pricing technique involves determining the selling price of a good by adding a profit markup to minimum average cost. This would result in maximum profits only if
   a. average cost were constant.
   b. the markup were zero.
   c. the markup varied with the elasticity of demand.
   d. demand were inelastic.

____ 15. It is usually assumed that a perfectly competitive firm's supply curve is given by its marginal cost curve. In order for this to be true, which of the following additional assumptions are necessary?
   I. That the firm seeks to maximize profits.
   II. That the marginal cost curve be positively sloped.
   III. That the price exceeds average variable cost.
   IV. That price exceeds average total cost.
   a. I and II but not III and IV.
   b. I and III but not II and IV.
   c. I and II only.
   d. I, II and III, but not IV.

____ 16. Which of the following conditions would result in the short-run marginal cost curve *not* correctly reflecting the supply behaviour of a profit maximizing firm?
   a. The firm is a price taker.
   b. Price exceeds average total cost.
   c. The elasticity of demand facing the firm is -3.
   d. The firm can vary several inputs in the short-run.

____ 17. If price is equal to short-run average variable cost, the firm is at the point known as
    a.   the cost-minimizing point.
    b.   the profit maximizing point.
    c.   the shutdown point.
    d.   the revenue maximizing point.

____ 18. Profits are maximized when the incremental profit is
    a.   maximized.
    b.   equal to zero.
    c.   negative.
    d.   positive.

____ 19. The marginal revenue at an arbitrary level of output is given by
    a.   the slope of the total revenue curve at that level of output.
    b.   the slope of a ray from the origin to the corresponding point on the total revenue curve.
    c.   the marginal cost.
    d.   All of the above.

____ 20. A firm should increase its output when
    a. $MR > MC$.
    b. $MR < MC$.
    c. $MR = MC$.
    d.   none of the above.

____ 21. The price of bananas is ¢50 per pound. If a grocery store is a price taker, their marginal revenue curve will be
    a.   horizontal, corresponding to the ¢50 price level.
    b.   downward sloping.
    c.   vertical.
    d.   none of the above.

____ 22. The demand function for DVDs is $q = 10.5 - 0.5P$, where q is measured in thousands of DVDs. The marginal revenue is given by $MR = 21 - 4q$. If the marginal cost of a DVD is $1, a profit maximizing firm will charge a price of $____ and sell ____ DVDs.
    a.   1; 5,000.
    b.   1; 10,000.
    c.   11; 5,000.
    d.   11; 2,500.

____ 23. The demand function for 12"x18" prints faced by your photo lab is $q = 120 - 5p$. The marginal revenue function is $MR = 24 - 0.4q$. Given that the marginal cost of one photograph is $4, you should set the price of one print at ____. The profit maximizing number of prints is ____.
    a. $4; 100.
    b. $4; 50.
    c. $14; 100.
    d. $14; 50.

____ 24. When a firm is a price taker, the elasticity of its demand curve is equal to
    a.   0.
    b.   -1.
    c.   any finite number lower than -1.
    d.   - 8.

____ 25. Suppose that a firm knows that the elasticity of the linear demand for its product is -0.5 when the price of their output is $10 per unit. At this point, the additional revenue the sale of one more unit of output will yield is ____, and the firm should sell ____.
   a. $10; more.
   b. -$10; less.
   c. $5; less.
   d. $30; more.

____ 26. There are five major ski and snowboard resorts in Alberta and the interior British Columbia. Raising the price of a ski pass in one of them will cause total revenue collected in that resort to fall. Raising the price of ski passes in all five resorts will cause total revenue collected in any of the resorts to rise. This might happen when
   a. the demand for ski passes in any of the resorts taken separately is inelastic, and a price increase leads to a decrease in total revenues, while the market demand for ski passes in the entire region is elastic, and therefore an increase in price will cause total revenue to rise.
   b. the demand for ski passes in any of the resorts taken separately is elastic, and a price increase leads to a decrease in total revenues, while the market demand for ski passes in the entire region is inelastic, and therefore an increase in price will cause total revenue to rise.
   c. the demand for ski passes in any of the resorts taken separately is inelastic, and an increase in price leads to a negative marginal revenue, while the market demand for ski passes in the entire region is elastic, with an increase in price leading to a positive marginal revenue.
   d. None of the above.

____ 27. Assume all university students have received a $200 coupon that can only be spent on textbooks. This leads to
   a. an upward shift of the demand curve for textbooks and a downward shift of the marginal revenue curve.
   b. an upward shift of the demand curve for textbooks and an upward shift of the marginal revenue curve.
   c. an upward shift of the demand curve for textbooks and an upward shift of the average revenue curve.
   d. Both (b) and (c).

____ 28. It is more profitable for airlines to fill the economy sections of their aircrafts by charging low enough prices for economy plane tickets than to sell fewer tickets at a higher price because:
   a. the demand for economy plane tickets is relatively elastic and the marginal cost of an additional passenger is very low.
   b. the demand for economy plane tickets is relatively inelastic and the marginal cost of an additional passenger is very low.
   c. this will decrease the demand for their business class seats.
   d. both (b) and (c).

____ 29. A firm should continue to operate in the short-run if its total revenues are
   a. larger than its total costs.
   b. larger than its total variable costs.
   c. larger than its total sunk costs.
   d. All of the above.

____ 30. Oil extraction from the Athabasca oil sands has become increasingly attractive because
   a. the increase in the world price of oil made them an economically viable source, generating positive profits despite the high extraction costs.
   b. political crises, instability and uncertainty have reduced the supply of oil from the Middle East, Venezuela, Nigeria, Russia, and Kazakhstan.
   c. of the dramatic increase in the demand for oil in China and India.
   d. All of the above.

____ 31. Your microeconomics professor has taught this course before using the same textbook. When he taught it for the first time he spent 200 hours preparing notes and other course materials. Spending this time for his consulting business would have paid $50 per hour. Next term he will only spend half an hour to prepare each of his 20 two-hour lectures. He will use old assignments and exams and have a TA grade everything. If he were not teaching, he could again work for his consulting business for $50 an hour. When he taught the course for the first time he knew that he will only teach it twice and that his remuneration will not change from one term to the other. He should have not accepted the job for less than ____ per term. He should not teach this course next semester for less than ____.
   a. $10,000; $2,000.
   b. $6,000; $2,500.
   c. $7,250; $2,500.
   d. $2,500; $6,000.

____ 32. The variable cost of a price-taking firms is $VC = 2q + 3q^2$. The short-run marginal cost is $SMC = 2 + 6q$ and the average variable cost is $AVC = 2 + 3q$. The short-run supply curve of this firm will be:
   a. $q = \dfrac{P}{6} - \dfrac{1}{3}$ for P > 2; q = 0 for P = 2.
   b. $q = \dfrac{P}{3} - \dfrac{2}{3}$ for P > 2; q = 0 for P = 2.
   c. $q = \dfrac{P}{6} - \dfrac{1}{3}$ for any price level.
   d. $q = \dfrac{P}{3} - \dfrac{2}{3}$ for any price level.

____ 33. A firm has two plants with different marginal cost functions: $MC_1 = 6q_1$ and $MC_2 = 3q_2$, where q_1 is the amount of output produced in the first plant and q_2 is the amount of output produced in the second plant. To minimize its total costs, the firm will
   a. produce only in the second plant, since $MC_2 = 3q_2$ is always smaller than $MC_1 = 6q_1$.
   b. always produce half of its output in one plant and half in the other plant.
   c. split its output between the two plants so that the marginal costs of producing the last units of output in each plant are equal.
   d. there is not enough information to answer this question.

____ 34. A firm has two plants with different marginal cost functions: $MC_1 = 9q_1$ and $MC_2 = 3q_2$, where q_1 is the amount of output produced in the first plant and q_2 is the amount of output produced in the second plant. If the firm is a price taker and the market price is $27, the profit maximizing amount of output is ____ units, out of which ____ units are produced in the first plant and ____ units are produced in the second plant.
   a. 12; 3; 9.
   b. 12; 9; 3.
   c. 12; none; 12.
   d. 27/12; 27/24; 27/24.

____ 35. Jason's firm produces no-name 2GB MP3 players. His total cost function is $TC = 0.3q^2 + 30q + 150$ and his marginal cost function is $MC = 0.6q + 30$. The prevailing market price for this type of MP3 players is $60. To maximize his profits he should sell ____ MP3 players. Assuming the fixed costs are not sunk, his profits will be ____. When the prevailing market price drops to $20, he should sell ____ MP3 players.
   a.   50; $750; 0.
   b.   50; $600; 0.
   c.   150; $2400; 83.
   d.   none of the above.

____ 36. Consider the following figure. This figure shows the indifference curve map of a manager's preferences between the firm's profits (which are a primary interest to the owners) and various benefits that accrue mainly to the manager. Profits are denoted by P. If the manager is also the owner of the firm and he chooses to have no special benefits from the job, profits will be Pmax. Each dollar of benefits received by the manager reduces profits by one dollar. Profits will reach zero when benefits total Bmax. Now assume the manager is only a partial owner of the firm: his budget constraint moves to "Agent's constraint" and a dollar of benefits costs him only $.33 of profits, the rest being paid by the other owners of the firm. Under the new ownership conditions the profits of the firm ____ and the benefits of the manager ____.
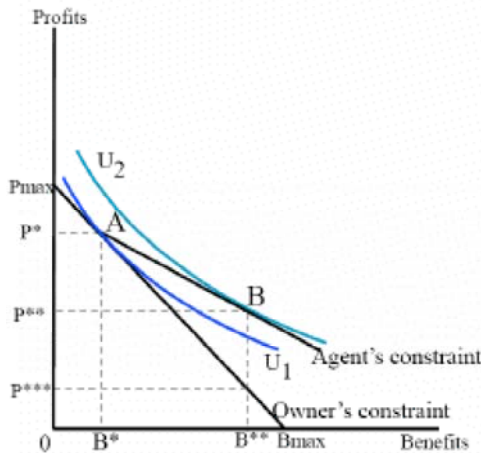
   a.   decrease from P* to P**; increase from B* to B**.
   b.   decrease from P* to P***; increase from B* to B**.
   c.   increase from P** to P*; decrease from B** to B*.
   d.   decrease from P** to P***; do not change.

____ 37. The Good Earth Cafes Ltd. offers franchise opportunities for individuals interested in opening a Good Earth coffee place. They prefer to operate their chain of coffee places through franchise contracts because
   a.   these contracts offer a control of the principal-agent problem, because the franchisee gets to keep a large share of the profits and is thus more motivated to increase the firm's profits and not only his own benefits.
   b.   different managers offer a larger assortment of coffee and bakery products than if all coffee places were run by the same manager.
   c.   these contracts allow individual owners to set coffee, food-quality and service standards, eliminating this problem from the parent company's agenda.
   d.   All of the above.

_____ 38. A contingency fee between a lawyer and a client involves the lawyer receiving between 25 and 35% of any settlement. Such a fee
    a. is better than a flat fee because it increases the effort the lawyer will exert to maximize her client's benefits.
    b. is better than an hourly fee, which offers no incentive to the lawyer to resolve the issue in a timely way.
    c. seeks the alignment of the lawyer's interests with her client's interests, thus controlling the principal agent problem that arises in such cases.
    d. All of the above.

_____ 39. The contract between the owners of a firms and a manager has to be written in such a way that
    a. the manager does not find it more profitable to pursue his own interests rather than the interests of the firm.
    b. the manager has an incentive to pursue this activity rather than working for another firm.
    c. the manager is able to maximize his benefits.
    d. both (a) and (b).

_____ 40. Which of the following sentences about the use of stock options as a form of executive compensation is true?
    a. It provides a way to control the principal-agent problem by tying an executive's compensation to the performance of the company's stock.
    b. One of the beneficial effects of this compensation method is the incentive it gives to CEOs to manipulate information that can affect share prices in their companies.
    c. Options may induce executives to make more risky investments than they ordinarily would because they are more valuable when the price of a company's stock is more volatile
    d. All of the above.

_____ 41. Explain how an increase in the cost of a variable input such as labour would affect a firm's profit-maximizing decision. Assume the firm is facing a downward-sloping demand curve.
    a. An increase in the cost of labour would increase the marginal cost of the firm's output, shifting the marginal cost curve up. The marginal revenue curve will intersect the marginal cost curve at a lower level of output and at a higher price than before the change in costs.
    b. An increase in the cost of labour would shift the marginal cost curve downward, and the firm would be able to sell more units of output at a lower price.
    c. An increase in the cost of labour would shift the demand curve outward. This would also shift the marginal revenue curve to the right, and the firm would end up selling less output at a higher price.
    d. Both (a) and (c).

_____ 42. Explain how a small annual fixed fee to be paid to the government for the right of doing business would affect a firm's profit-maximizing decision.
    a. If the firm has paid the annual fee in January, and it is already July, this fee will not influence the firm's profit maximizing decision for the remaining months in the current year because it is a sunk cost which cannot be recovered.
    b. Before the beginning of a new year the firm has to make sure that their estimated revenues will cover their estimated costs, including the above-mentioned fee, or else they should shut down and not pay the fee for that year.
    c. The fee decreases the marginal cost of the firm, reducing their profit maximizing output and increasing the price of the product.
    d. Both (a) and (b).

____ 43. Consider the following figure. SMC represents a firm's short-run marginal cost. SAVC is the short-run average variable cost and SATC is the short-run average total cost. When the price is equal to P, the firm will find it profit maximizing to produce _____ units of output. The shut-down price for this firm is _____.
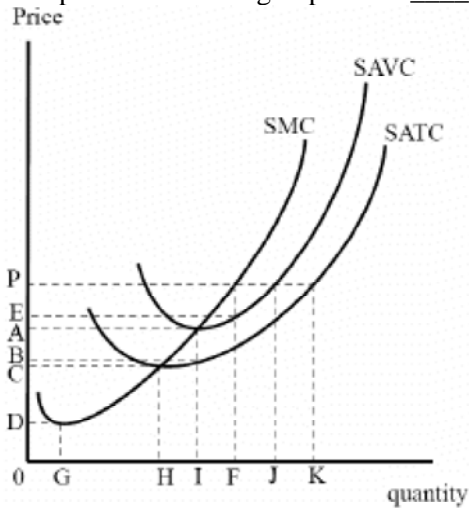
   a.   0J; 0A..
   b.   0K; 0C.
   c.   0F; 0A.
   d.   0F; 0D.

____ 44. The following sentence about a firm's short-run supply decision is true:
   a.   An increase in the price of a variable input leads to an upward shift of the firm's supply curve.
   b.   An increase in the price of a variable input leads to an increase in the firm's shut-down price.
   c.   An increase in the price of a fixed input leads to an upward shift of the firm's supply curve.
   d.   Both (a) and (b)

____ 45. Which of the following actions will affect a firm's marginal cost?
   a.   receipt of a subsidy per worker hired from the government.
   b.   institution of a per-unit tax on each unit the firm produces.
   c.   receipt of a subsidy per unit of output from the government.
   d.   all of the above.

____ 46. In the very short run
   a.   new firms may enter the industry.
   b.   existing firms may change the quantity they are supplying.
   c.   price and quantity supplied are absolutely free.
   d.   quantity supplied is absolutely fixed.

____ 47. In the short run
   a.   new firms may enter an industry.
   b.   existing firms may change the quantity they are supplying.
   c.   price and quantity supplied are absolutely fixed.
   d.   quantity supplied is absolutely fixed.

_____ 48. The short-run market supply curve is
   a. the horizontal summation of each firm's short-run supply curve.
   b. the vertical summation of each firm's short-run supply curve.
   c. the horizontal summation of each firm's short-run average cost curve.
   d. the vertical summation of each firm's short-run average cost curve.

_____ 49. In the short run an increase in market demand will usually lead to a(n)
   a. decrease in price and an increase in quantity.
   b. decrease in price and a decrease in quantity.
   c. increase in price and an increase in quantity.
   d. increase in price and a decrease in quantity.

_____ 50. A demand curve will shift out for any of the following reasons except
   a. preference for a good increases.
   b. price of a substitute falls.
   c. income rises.
   d. price of a complement falls.

_____ 51. If a 1% increase in price leads to a 7% increase in quantity supplied, the short-run supply curve is
   a. elastic.
   b. inelastic.
   c. unit elastic.
   d. perfectly inelastic.

_____ 52. If the market for hula-hoops is characterized by a very inelastic supply curve and a very elastic demand curve, an inward shift in the supply curve would be reflected primarily in the form of
   a. higher prices.
   b. higher output.
   c. lower prices.
   d. lower output.

_____ 53. If the market for bottled spring water is characterized by a very elastic supply curve and a very inelastic demand curve, an outward shift in the supply curve would be reflected primarily in the form of
   a. higher prices.
   b. higher output.
   c. lower prices.
   d. lower output.

_____ 54. Suppose that the price elasticity of demand for a product is -1 and that the price elasticity of supply is +1. Assume also that the income elasticity of demand is +2. Then an increase in income of 10% will raise the equilibrium price by
   a. 10%.
   b. 5%.
   c. 20%.
   d. an annual amount that cannot be determined.

_____ 55. Under perfect competition, if an industry is characterized by positive economic profits in the short run
   a. firms will leave the market in the long run and the short-run supply curve will shift outward.
   b. firms will enter the market in the long-run and the short-run supply curve will shift outward.
   c. firms will enter the market in the long run and the short-run supply curve will shift inward.
   d. firms will leave the market in the long run and the short-run supply curve will shift inward.

____ 56. Positive economic profits exist for a firm in the long run if price is above
    a.   long-run average cost.
    b.   long-run marginal cost.
    c.   long-run total cost.
    d.   long-run fixed cost.

____ 57. Firms in long-run equilibrium in a perfectly competitive industry will produce at the minimum points of their average total cost curves because
    a.   free entry implies that long-run profits will be zero and this happens at the minimum point of a firm's average cost curve, where AC = MC = P.
    b.   firms seek maximum profits and to do so they must choose to produce where average costs are minimized.
    c.   firms in the industry desire to operate efficiently.
    d.   both (a) and (b)

____ 58. For an increasing cost industry, the long-run supply curve has a(n) ____ elasticity of supply.
    a.   infinite.
    b.   negative.
    c.   positive.
    d.   zero.

____ 59. The long-run elasticity of supply is defined as
    a.   percentage change in quantity demanded in the long run divided by percentage change in price.
    b.   percentage change in price divided by percentage change in quantity demanded in the long run.
    c.   percentage change in quantity supplied in the long-run divided by percentage change in price.
    d.   percentage change in price divided by percentage change in quantity demanded in the long run.

____ 60. The infant industry case for tariff protection assumes that the protected industry is
    a.   a decreasing cost industry.
    b.   an increasing cost industry.
    c.   a constant cost industry.
    d.   the producer of a new product.

____ 61. There are 100 identical hardwood flooring companies in your city. The market demand for square feet of flooring is $Q_D = 15,000 - 500P$. In the very short run, each of these firms has a fixed supply of 100 square feet of flooring. The equilibrium price in the very short run is:
    a. $29.8.
    b. $10.
    c. $350.
    d. $30.

____ 62. There are 100 identical hardwood flooring companies in your city. The market demand for square feet of flooring is $Q_D = 15,000 - 500P$. In the very short run, each of these firms has a fixed supply of 100 square feet of flooring. Assume the market demand has unexpectedly increased and each client is willing to pay $5 more per square foot of hardwood floor. The new equilibrium price in the very short run is:
    a. $10.
    b. $15.
    c. $20.
    d. $30.

_____ 63. There are 100 identical hardwood flooring companies in your city. The market demand for square feet of flooring is $Q_D = 15,000 - 500 P$. The market short-run supply is $Q_S = -1,000 + 300 P$. The equilibrium price is _____ and each firm produces _____ square feet of hardwood floor.
   a. $20; 50.
   b. $10; 20.
   c. $15; 35.
   d. $25; 65.

_____ 64. There are two firms on the market. Firm 1's supply is given by $Q_S^1 = -999 + 3P$ and firm 2's supply is given by $Q_S^2 = 199 + 10 P$. The market supply is:
   a. $Q_S^M = -800 + 13P$ for P=333; $Q_S^M = 199 + 10 P$ for P<333.
   b. $Q_S^M = -800 + 13P$ for P=333; $Q_S^M = 999 + 3P$ for P<333.
   c. $Q_S^M = -800 + 13P$ for P=19.9; $Q_S^M = 199 + 10 P$ for P<19.9.
   d. $Q_S^M = -800 + 13P$ for P=19.9; $Q_S^M = 999 + 3P$ for P<19.9.

_____ 65. Suppose there are 200 firms in the perfectly competitive textile industry. Each firm has a short-run total cost curve of the form $STC = \dfrac{q^3}{1200} + 0.1q^2 + 4q + 4$, and a marginal cost curve of the form $SMC = 0.0025 \, q^2 + 0.2q + 4$. The industry supply curve is:
   a. $Q_S = 0.0025 \, q^2 + 0.2q + 4$.
   b. $Q_S = 0.5q^2 + 40q + 800$.
   c. $Q_S = 20\sqrt{P} - 40$.
   d. $Q_S = 4000\sqrt{P} - 8000$.

_____ 66. The demand for gasoline is inelastic. The increase in the price of crude oil shifts the supply of gasoline _____. This change is met primarily by _____, with only a slight _____.
   a. inward; an increase in price; decrease in quantity.
   b. outward; a decrease in price; increase in quantity.
   c. inward; a decrease in quantity; an increase in price.
   d. outward; an increase in quantity; a decrease in price.

_____ 67. The demand for Sony MP3 players is relatively elastic. Technological improvements have recently led to an _____ shift in the supply of Sony MP3 players. This has mainly affected the equilibrium _____.
   a. outward; price.
   b. outward; quantity.
   c. inward; price.
   d. inward; quantity.

_____ 68. The short-run supply curve for Romanian bottled mineral water in Canada is inelastic. Recent changes in the immigration process have led to a large influx of thirsty consumers. This has generated an _____ shift in demand, and it has mostly affected the equilibrium _____ rather than the _____.
   a. outward; price; quantity.
   b. outward; quantity; price.
   c. inward; price; quantity.
   d. inward; quantity; price.

____ 69. Pink, last year's colour, is no longer in fashion. This is equivalent to an ____ shift in demand. Given the
          relatively elastic supply of pink outfits, this change in fashion had a relatively stronger impact on the
          equilibrium ____ of pink outfits rather than on ____.
          a.   outward; quantity; price.
          b.   outward; price; quantity.
          c.   inward; quantity; price.
          d.   inward; price; quantity.

____ 70. The demand for 2 GB USB drives is $Q_D = 1000 - 10P$ and the short-run supply is $Q_S = 20P - 200$. The
          equilibrium price is \$____. After the introduction of a \$6 recycling fee which has to be paid in addition to the
          price, the equilibrium price will be \$____.
          a.   \$40; \$34.
          b.   \$40; \$38.
          c.   \$27; \$32.
          d.   \$40; \$36.

____ 71. Because a mixture of ethanol and gasoline results in a fuel that burns more cleanly and produces lower GHG
          than unblended gasoline, the Canadian government has promoted the use of ethanol by eliminating the excise
          tax on the ethanol portion in ethanol-blended gasoline. If this shifts the supply curve downward by x cents,
          the price of gasoline will
          a.   decrease by x cents.
          b.   increase by x cents.
          c.   decrease by more than x cents.
          d.   decrease by less than x cents.

____ 72. Because a mixture of ethanol and gasoline results in a fuel that burns more cleanly and produces lower GHG
          than unblended gasoline, the Canadian government has promoted the use of ethanol by eliminating the excise
          tax on the ethanol portion in ethanol-blended gasoline. This has lead to
          a.   an increase in both consumer and producer surplus.
          b.   an increase in consumer surplus and a decrease in producer surplus.
          c.   a decrease in consumer surplus and an increase in producer surplus.
          d.   a decrease in both consumer and producer surplus.

____ 73. Firms earn zero long-run economic profits when
          a.   all firms have identical cost curves.
          b.   all firms have access to the same resources.
          c.   all firms have access to the same technologies.
          d.   all of the above.

____ 74. When the entry of a new firm on the market imposes external costs on existing firms, the long-run supply
          curve in the market will be
          a.   upward sloping.
          b.   downward sloping.
          c.   horizontal.
          d.   vertical

____ 75. Consider a perfectly competitive market in which the entry or exit of firms does not affect the cost curves of
          the other firms. The following statement is true:
          a.   the long-run supply curve is horizontal.
          b.   the demand curve faced by a particular firm is horizontal.
          c.   the typical short-run supply curve is upward sloping.
          d.   All of the above.

_____ 76. Consider a perfectly competitive industry with a large number of potential entrants. Each firm has an identical cost structure such that long-run average cost is minimized at an output of 24 units ($q_i = 24$). The minimum average cost is $10 per unit. Total market demand is given by $Q = 3000 - 60P$. The long-run equilibrium price is $____, the total industry output is ____, the number of firms is ____, and the profits of each firm are $____.
     a. $24; 1560; 66; 0.
     b. uncertain; $3000 - 60P$; $(3000 - 60P)/24$; 0.
     c. $10; 2400; 100; 0.
     d. none of the above.

_____ 77. The market long-run supply curve will be downward sloping when
     a. the costs of a typical firm after entry are lower than the costs of a typical firm before entry.
     b. the entry of a new firm increases the input costs of all the other firms.
     c. The entry of new firms reduces the pool of trained labour, thus increasing the costs of hiring new workers.
     d. Both (b) and (c).

_____ 78. According to some studies quoted by your textbook, the estimated long-run supply elasticity of wheat is +0.03. For crude oil the estimate is +0.75. This means that
     a. the price of wheat is more likely to rise in the long-run due to an increase in demand than the price of oil
     b. the price of oil is more likely to rise in the long-run due to an increase in demand than the price of wheat.
     c. the cost curves of wheat farmers are more affected in the long-run than the cost curves of crude oil producers.
     d. None of the above.

_____ 79. According to some studies quoted by your textbook, the long-run supply elasticity of aluminum is nearly infinite. This tells us that for the period under survey the costs of the firms in the industry ____ when new firms entered the market.
     a. remained constant.
     b. increased.
     c. decreased.
     d. none of the above.

_____ 80. All firms in a perfectly competitive industry face the same long-run average cost curve, $AC = 0.05q - 5 + 500/q$, and the same long-run marginal cost curve, $MC = 0.1q - 5$. Assuming the market is in long-run equilibrium, how much will each firm sell per day? What will the price be?
     a. $q^* = 500$; $P^* = \$45$.
     b. $q^* = 5$; $P^* = \$100$.
     c. $q^* = 100$; $P^* = \$5$.
     d. We need more information to answer this question.

_____ 81. All firms in a perfectly competitive industry face the same long-run average cost curve, $AC = 0.05q - 5 + 500/q$, and the same long-run marginal cost curve given by $MC = 0.1q - 5$. The market demand for the product of these firms is $Q^D = 100{,}000 - 10{,}000P$. Assuming the market is in long-run equilibrium, there will be ____ firms on the market.
     a. 100.
     b. 500.
     c. 1000.
     d. 200.

____ 82. A competitive firm's long-run total cost function is: $TC(q) = 144 + q^2$. The long-run marginal cost function is $MC(q) = 2q$. The efficient (optimal) scale of production is:
   a. 12.
   b. 10.
   c. 15.
   d. None of the above.

____ 83. Consider a perfectly competitive market with identical firms. Which of the following statements is true if the production function of the typical firm exhibits constant returns to scale?
   I. The long-run average cost curve of a typical firm is identical with its long-run marginal cost curve.
   II. The number of firms in long-run competitive equilibrium is well-defined if we know the market demand.
   a. both I and II.
   b. only I.
   c. only II.
   d. neither I, nor II.

____ 84. The long-run supply curve in a perfectly competitive market is $Q_S = 198 + 0.2\,P$. The slope of this curve when $P = 10$ is 0.2. At this point, the long-run supply elasticity is equal to:
   a. 0.2.
   b. 2.
   c. 0.25.
   d. 0.01.

____ 85. A competitive firm's long-run total cost function is $TC(q) = 768 + 3q^2$, and its long-run marginal cost function is $MC(q) = 6q$. The market demand is $Q^D = 304 + P$. In the long-run equilibrium there will be _____ firms on the market and each firm's profits will be _____.
   a. 25; positive, to keep the firm motivated to stay on the market.
   b. 25; zero.
   c. 40; zero.
   d. 40; positive, to keep the firm motivated to stay on the market.

____ 86. Which of the following two statements is true?
   I. In the long-run, a competitive firm will never produce where its average cost curve is downward sloping.
   II. If a competitive firm is currently producing where its short-run average cost is upward sloping, then other firms will enter the industry.
   a. both I and II.
   b. only I.
   c. only II.
   d. neither I, nor 2.

____ 87. The government has just instituted an additional $1000 property tax on new homes. Assume that the cost curves of builders, developers, and all other firms involved in the supply of new houses remain unchanged when new firms enter or exit the industry. In the long run, the effect of this additional tax will be:
   a. a decrease in price and in the equilibrium number of new houses.
   b. a decrease in price and an increase in the equilibrium number of new houses.
   c. no change in price and a decrease in the equilibrium number of new houses.
   d. a decrease in price and no change in the equilibrium number of new houses.

_____ 88. It is tempting to argue that the presence of network externalities in telecommunications and internet services gives their long-run supply curves a negative slope. Falling prices just reflect movement along this supply curve as demand expands. This analysis is unconvincing because
   a. the benefits of network externalities accrue largely to demanders, not to suppliers in terms of lower input costs.
   b. telecommunications and internet services do not generate network externalities.
   c. input prices have been falling because of technical progress, which is largely independent of network externalities.
   d. Both (a) and (c).

_____ 89. Metcalfe's law implies that
   a. the presence of network externalities gives long-run supply curves in the telecommunications industry a positive slope.
   b. the value of a communications network expands more rapidly than do the costs associated with establishing it.
   c. additional users to a network cause negative network externalities.
   d. All of the above.

_____ 90. The presence of a new transportation firm puts strain on the public roads. This is a _____ which leads to a(n) _____ long-run supply curve.
   a. negative externality; downward-sloping.
   b. positive externality; downward-sloping.
   c. negative externality; upward-sloping.
   d. positive externality; upward-sloping.

_____ 91. A deadweight loss of consumer and/or producer surplus occurs when
   a. producers fail to maximize profits.
   b. mutually beneficial transactions cannot be completed.
   c. consumers do not maximize their utility.
   d. the price of inputs increases.

_____ 92. In a competitive market, an efficient allocation of resources is characterized by
   a. a price greater than the marginal cost of production.
   b. the possibility of further mutually beneficial transactions.
   c. the largest possible sum of consumer and producer surplus.
   d. a value of consumer surplus equal to that of producer surplus.

_____ 93. "Missing markets" result from
   a. high transaction costs of such markets.
   b. strict price controls.
   c. the inability of producers to gain economies of scale.
   d. foreign countries dominating a domestic market for a product.

_____ 94. Price ceilings
   a. are always popular with consumers because they lower prices.
   b. create shortages.
   c. increase producer surplus because firms can now sell a greater quantity of a good at a lower price.
   d. are necessary to preserve equity.

_____ 95. One example of Ricardian rent is
- a. rent paid to landlords under price controls.
- b. the difference between the price of a highly demanded unique piece of artwork and the opportunity cost of maintaining it.
- c. the amount paid to a seller above the equilibrium price of tourist class tickets in order to receive higher equality seats in first class.
- d. the price rise of wool from a disease among sheep.

_____ 96. In the short run, the incidence of a sales tax is
- a. wholly absorbed by the producer.
- b. shared between the consumer and the producer.
- c. deferred until the market is able to re-establish an equilibrium price.
- d. wholly absorbed by the consumer.

_____ 97. In the long run, the greater burden of a specific tax will usually be absorbed by
- a. consumers.
- b. the party – consumers or producers – with the more elastic demand / supply curve.
- c. the party with the least elastic demand / supply curve.
- d. shareholders and employees of the firm in the form of reduced dividends and wages.

_____ 98. In the short run, specific taxes on a firm result in
- a. price increases that may not persist in the long run.
- b. an increase in consumer surplus because the tax permits spending in additional government services.
- c. shortages of the good being taxed.
- d. an increase in producer surplus because of the rise in price.

_____ 99. The excess burden of a tax is
- a. the amount by which the price of a good increases.
- b. the loss of consumer and producer surplus that is not transferred elsewhere.
- c. the amount by which a person's after-tax income decreases as a result of the new tax.
- d. the welfare costs to firms forced to leave the market due to an inward shift of the demand curve.

_____ 100. One way to minimize the deadweight loss resulting from a specific tax is to
- a. tax only wealthy firms and individuals.
- b. spread the tax over many goods and services.
- c. tax goods for which either supply or demand is inelastic.
- d. tax luxury items such as yachts and sports cars.

_____ 101. Per unit transaction costs
- a. may cause the demand and supply curves to shift either inward or outward depending on the value obtained from transaction agents.
- b. refer only the commission paid to a third party for each transaction made.
- c. are absorbed by the party seeking the transaction.
- d. have the same effect on behaviour as do lump-sum transaction costs, the difference in terminology is purely definitional.

_____ 102. When prices drop in response to a decline in demand for an increasing cost industry
- a. producer surplus will increase but rents may decrease.
- b. rent earned by elastically supplied inputs will decline by more than rent earned by inelastically supplied inputs.
- c. rent earned by elastically supplied inputs will decline by less than rent earned by inelastically supplied inputs.
- d. both producer surplus and rents will decrease.

____ 103. If the quantity supplied is either greater or less than the equilibrium quantity, then all of the following are true except:
   a.   total loss of surplus will depend on the shape of the demand and supply curves.
   b.   the resulting loss of consumer surplus will depend on the price of the good.
   c.   total loss of surplus will depend on the price of the good.
   d.   there will be an inefficient allocation of resources.

____ 104. In the opening of free trade, if world prices of a good are less than domestic prices of that same good,
   a.   domestic consumers will experience a loss of surplus.
   b.   domestic prices will drop to the world price level.
   c.   all domestic producers of that good will try to find another market because they can't compete with foreign producers.
   d.   domestic producers will increase the quantity supplied in order to crowd out the foreign produced good.

____ 105. Who benefits from protectionism?
   a.   Consumers.
   b.   Domestic producers.
   c.   No one.
   d.   Both consumers and domestic producers.

____ 106. Quotas that limit the quantity of imports of a foreign good provide an incentive for foreign suppliers to:
   I. Provide lower quality goods.
   II. Seek more open markets elsewhere.
   III. Lower prices to be more competitive.
   IV. Stop all trade with the country imposing the quotas.
   Which of the above statements are true?
   a.   II.
   b.   I and III.
   c.   II and IV.
   d.   I, III and IV.

____ 107. When an import quota is instituted, the loss of domestic consumer surplus may be transferred to all of the following except
   a.   domestic government.
   b.   domestic producers.
   c.   foreign producers.
   d.   domestic consumers of complementary products.

____ 108. In the short-run, the market supply curve's positive slope reflects the ____ returns to variable inputs encountered as output increases. Thus price ____ marginal cost (as reflected by the supply curve) at all output levels except the equilibrium level. Production of these "intramarginal" units of output generates incremental ____ surplus.
   a.   decreasing; is lower than; producer.
   b.   increasing; exceeds; consumer.
   c.   decreasing; exceeds; producer.
   d.   increasing; exceeds; producer.

____ 109. The long-run producer surplus in a constant-cost industry
   a.   is equal to zero.
   b.   reflects the diminishing returns of variable inputs that are encountered as output is increased.
   c.   is greater than zero.
   d.   none of the above.

_____ 110. Assume there are two types of firms on a perfectly competitive market: low-cost firms and high-cost firms. The cost curves of the firms from the same category are identical, and they are not affected by the entry or exit of firms. The following statement is true in the long run:
   a.   Both types of firms earn Ricardian rents.
   b.   Only the low-cost firms earn Ricardian rents.
   c.   Only the high-cost firms earn Ricardian rents.
   d.   None of these firms earn Ricardian rents.

_____ 111. Suppose the demand for cotton T-shirts is given by $Q^D = 1900 - 200P$, where Q is the number of T-shirts and P is the price in dollars per T-shirt. The long-run supply curve for T-shirts is given by $Q^D = 50P - 100$. The consumer surplus at equilibrium is _____. The producer surplus at equilibrium is _____.
   a. $225; $600.
   b. $225; $900.
   c. $150; $900.
   d. $150; $600.

_____ 112. Assume the T-shirt market demand and supply curves are linear. In equilibrium the consumer surplus is equal to $225 and the producer surplus is equal to $900. Assume the government implements a $1 tax per T-shirt which has to be paid by T-shirt retailers. Which of the following statements is true?
   a.   Consumers pay more than producers.
   b.   Producers pay more than consumers.
   c.   Consumers and producers share the burden equally.
   d.   Only producers pay.

_____ 113. Which of the following measures may generate effects similar to a tariff?
   a.   "voluntary" export restraints.
   b.   qualitative restrictions on imports.
   c.   import prohibition of certain shrimp products (for health reasons).
   d.   all of the above.

_____ 114. The daily demand function for milk in an isolated village is $Q^D = 30 - 2P$ and the supply function is $Q^S = 10P - 6$, where Q is the quantity of milk measured in litres and P is the price per litre in dollars. If a 20-litre production quota is imposed on this market, the deadweight loss created by this restraint on trade is:
   a. $4.8
   b. $4.0.
   c. $8.0.
   d. $5.0.

_____ 115. The daily demand function for milk in an isolated village is $Q^D = 30 - 2P$ and the supply function is $Q^S = 10P - 6$, where Q is the quantity of milk measured in litres and P is the price per litre in dollars. If a 10-litre production quota is imposed on this market, the transfer of surplus from consumers to producers is equal to:
   a. $49.
   b. $84.
   c. $70.
   d. $14

_____ 116. The short-run effects of a binding price floor on local telephone services are:
   a.   excess supply.
   b.   deadweight loss.
   c.   a transfer of surplus from consumers to producers.
   d.   all of the above.

_____ 117. A specific commodity tax of amount t charged to consumers lowers the after tax demand curve. The short-run demand curve is downward sloping and the short-run supply curve is upward sloping. In the short-run consumers pay _____. In the long-run they pay _____ if producers' cost curves remain unchanged in the long run.
  a. part of the tax; the entire tax.
  b. part of the tax; part of the tax.
  c. the entire tax; part of the tax.
  d. the entire tax; the entire tax.

_____ 118. The demand for 512 MB USB drives is $Q^D = 6000 - 100P$, where P is the price measured in dollars and Q is the quantity of USB drives. The supply function is given by $Q^S = 200P$. A new environmental tax is introduced: producers have to pay a $1.5 recycling fee for each USB drive. The new price consumers have to pay is _____.
  a. $20.5.
  b. $21.
  c. $21.5
  d. $20.

_____ 119. The daily demand function for milk in an isolated village is $Q^D = 30 - 2P$ and the supply function is $Q^S = 10P - 6$, where Q is the quantity of milk measured in litres and P is the price per litre in dollars. According to the findings of the most recent health report, milk consumption is associated with better health. The leaders of the village decide to pay a $1.2 subsidy for each litre of milk sold on the market. The price of milk will decrease by _____ per litre, and the consumption will increase by _____. The deadweight loss created by this subsidy will be equal to _____.
  a. $1.2; 2.4 litres; $1.44.
  b. $1; 2litres; $1.2.
  c. $1.2; 1.4 litres; $0.04.
  d. $1; 2 litres; $0.36.

_____ 120. Assume the domestic demand function for good X is $Q^D = 1500 - 300P$ and the domestic supply function for good X is $Q^S = 700P - 500$, where Q is the quantity of X and P is the price per unit in dollars. The world price is $1. Our country is small enough not to influence the world price under free trade. Under free trade domestic producers will supply _____ units of X, and _____ units of X will be imported. When a ¢50 per unit import tariff is imposed on good X, the domestic producers will supply _____ units of X, and the foreign producers will supply _____ units of X.
  a. 900; 450; 1200; 600.
  b. 1200; 1000; 500; 550.
  c. 200; 1000; 500; 550.
  d. 200; 1000; 550; 500.

_____ 121. Assume the domestic demand function for good X is $Q^D = 1500 - 300P$ and the domestic supply function for good X is $Q^S = 700P - 500$, where Q is the quantity of X and P is the price per unit in dollars. The world price is $1. Our country is small enough not to influence the world price under free trade. If a ¢50 per unit import tariff is imposed on good X the government collects $_____ and the excess burden of this tariff is $_____.
  a. $500; $250.
  b. $250; $125.
  c. $400; $250.
  d. $250; $200.

____ 122. Assume the domestic demand function for good X is $Q^D = 1500 - 300P$ and the domestic supply function for good X is $Q^S = 700P - 500$, where Q is the quantity of X and P is the price per unit in dollars. The world price is $3. Our country is small enough not to influence the world price under free trade. Under free trade the domestic consumption consists of ____ units of X and the domestic production consists of ____ units of X. Free trade increases total surplus by ____ compared to the autarkic state.
   a.   1000; 600; $300.
   b.   1600; 600; $400.
   c.   600; 1600; $400.
   d.   600; 1600; $500.

____ 123. Assume country A imports part of their consumption of good X, and country B exports part of their production of good X. Assume that when each of the two countries moves back to an autarkic state their total surplus losses are identical. The difference between the two situations is that
   a.   consumers lose in country A and producers lose in country B.
   b.   consumers lose in country B and producers lose in country A.
   c.   consumers lose more in country A than producers lose in country B.
   d.   producers lose more in country A than consumers lose in country B.

____ 124. Consider the following figure. Smith's indifference curve map for goods X and Y is drawn with O_S as an origin. Jones's indifference curve map is drawn with the corner O_J as an origin. The set of all efficient allocations is given by the contract curve drawn between O_S and O_J. A represents individuals' initial endowments and E is an equitable allocation. Can E be reached through voluntary transactions?
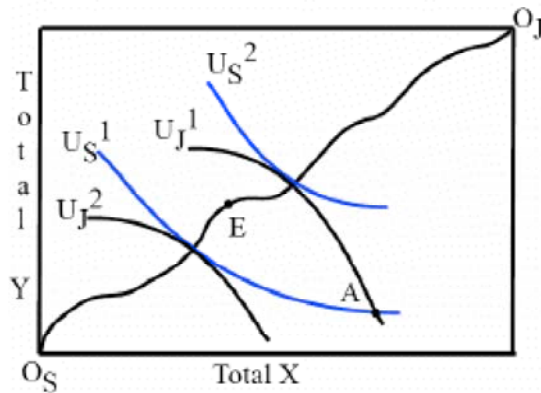
   a.   Yes, because E represents a Pareto improvement compared to A: both Smith and Jones will be better off at E than at A.
   b.   Yes, E can be reached since it is a point on the contract curve, and any point on the contract curve can be reached through voluntary transactions given the initial endowment A.
   c.   No, because while Smith is better off at E, Jones is worse off than at A.
   d.   No, because an equitable allocation cannot be efficient.

____ 125. Consider the following figure. Smith's indifference curve map for goods X and Y is drawn with origin O_S. Jones's indifference curve map is drawn with the corner O_J as an origin. The set of all efficient allocations is given by the contract curve drawn between O_S and O_J. Do the allocations O_S and O_J belong to the contract curve?
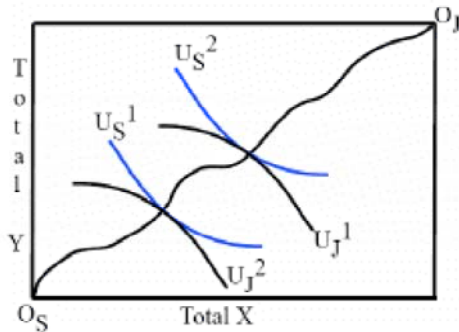
   a. Yes, both O_S and O_J belong to the contract curve.
   b. No, none of them belongs to the contract curve since the situation when one consumer has nothing and the other consumer has everything is not economically efficient.
   c. Only O_S belongs to the contract curve.
   d. Only O_J belongs to the contract curve.

____ 126. Suppose the goods X and Y are being produced efficiently and the production of X is always more labour intensive than the production of Y. Production depends only on two factors (capital and labour), which may be smoothly substituted for each other. The total quantities of these inputs are fixed. An increase in the production of X and a decrease in the production of Y will
   a. increase the capital – labour ratio in each firm.
   b. decrease the capital – labour ratio in each firm.
   c. leave the capital – labour ratio for each firm unchanged.
   d. increase the capital – labour ratio in Y production and decrease the capital – labour ratio in X production.

____ 127. An efficient allocation of productive inputs requires that
   a. each output has the same rate of technical substitution among inputs used.
   b. each output has the same marginal rate of substitution for consumers.
   c. each pair of outputs has the same rate of product transformation.
   d. each individual has the same marginal rate of substitution between outputs.

____ 128. The slope of the production possibility frontier shows
   a. the marginal rate of substitution between the two goods.
   b. the relative marginal costs of the two goods.
   c. the efficient combination of outputs possible using fixed amounts of input.
   d. the relative marginal productivities of the two goods.

____ 129. The rate of product transformation refers to
   a. how a consumer can trade one good for another while still maximizing his or her utility.
   b. how a firm can substitute one input for another and still maintain the same production level.
   c. how production of one good can be substituted for another while still using a fixed supply of inputs efficiently.
   d. how quickly a firm can produce a final good while starting with only natural resources.

_____ 130. In an economy consisting of only two goods, corn and cloth, the amount of extra cloth that can be produced efficiently if the corn output is reduced by one unit is equal to
a. the rate of technical substitution for corn divided by the rate of technical substitution for cloth.
b. the rate of technical substitution for cloth divided by the rate of technical substitution for corn.
c. the marginal cost of cloth divided by the marginal cost of corn.
d. the marginal cost of corn divided by the marginal cost of cloth.

_____ 131. Each of the following factors might interfere with the efficiency of perfect competition except:
a. public goods.
b. imperfect price information.
c. externalities.
d. diminishing returns to scale.

_____ 132. The reason externalities distort the allocation of resources is that
a. too few goods are usually produced.
b. firms often go out of business because of the externality.
c. a firm's private costs do not reflect the social cost of production.
d. regulating externalities uses scarce resources.

_____ 133. Under a perfectly competitive price system
a. an equitable allocation of the available resources will always result.
b. there is no opportunity for individuals to trade amongst themselves.
c. there is no reason to expect that voluntary trade will result in an equitable allocation of the available resources.
d. None of the above will result.

_____ 134. Consider three ways of allocating two goods in a two-person exchange economy:
I. Both individuals take prices as given and equilibrium prices are established by an impartial auctioneer.
II. One individual can act as a perfect price discriminator and force the other individual to pay a different price for each unit of a good that is traded.
III. One individual is a monopolist and can charge the other individual a single, utility-maximizing price.
Which of the following situations is efficient?
a. None of them.
b. Only I.
c. I and II, but not III.
d. I and III, but not II.

_____ 135. In free exchange among two individuals the position on the contract curve finally arrived at will, among other things, depend on:
I. The bargaining strength of each individual.
II. The initial endowments of the individuals.
III. The individuals' preferences.
Which of these correctly completes the statement?
a. Only III.
b. I, II and III.
c. I and III, but not II.
d. II and III, but not I.

Econ8500_Competitive_MKT_Study
Answer Section

MULTIPLE CHOICE

1. ANS: C
   Microeconomic theory assumes that firms attempt to maximize economic profits, which are calculated as the difference between total revenues and total economic costs.

   PTS: 1   REF: 225

2. ANS: B
   $TR(q) = Pq$.

   PTS: 1   REF: 225

3. ANS: D
   The marginal revenue is the extra revenue a firm receives when it sells one more unit of output.

   PTS: 1   REF: 226

4. ANS: B
   Profits are maximized when marginal profit equals zero, i.e. a one unit increase in output leads to zero increase in profits. This happens when marginal revenue equals marginal cost. A further increase in output would lead to a decrease in profits, and the same would happen for a decrease in output.

   PTS: 1   REF: 227

5. ANS: C
   If demand is inelastic, a fall in price leads to a decrease in revenues. This is because output increases, but not enough to cover the reduction in price: the firms makes additional revenue on the additional units sold, but each of them is now sold at a lower price, and this second effect is stronger when demand is inelastic.

   PTS: 1   REF: 231

6. ANS: B
   When marginal revenue is equal to zero it is impossible for the firm to further increase its revenues: an increase in output brings about no increase in revenues, so revenues are maximized at this point.

   PTS: 1   REF: 231

7. ANS: C
   Profits are maximized where marginal revenue is equal to marginal cost. Since the firm is a price-taker, marginal revenue is equal to price, so the profit maximizing condition is $P = MC$. This will be profitable only if the market price is higher than the minimum average variable cost, which gives us the shut-down price.

   PTS: 1   REF: 237

8. ANS: A
   A price-taking firm sells every unit of their output at a market dictated price, so their marginal revenue is constant and equal to market price.

   PTS: 1   REF: 237

9. ANS: C
   A firm keeps increasing output while marginal revenue is greater than marginal cost. The optimal output is the one for which MR = MC. An increase in production will generate a marginal revenue smaller than the marginal cost, decreasing total profits.

   PTS: 1   REF: 227

10. ANS: B
    A decrease in price has two effects: an increase in revenues due to an increase in the quantity demanded, and a decrease in revenues due to the fact that every unit is now sold at a lower price. When demand is inelastic the increase in quantity is relatively small, and its effect on total revenues is smaller than the one generated by the smaller price charged for each unit. Thus total revenues decline.

    PTS: 1   REF: 231

11. ANS: B
    If the demand curve is elastic, selling one less unit of output will generate a relatively small increase in price (since output is very sensitive to price changes). The effect on revenues generated by the decrease in sales is larger than the effect generated by the small increase in price, so revenues decrease overall.

    PTS: 1   REF: 231

12. ANS: C
    $MR(q) = P(q)\left(1 + \dfrac{1}{e_{q,P}}\right)$, so we can see that the marginal revenue curve is positively related to the demand curve: if the demand curve shifts to the right, the marginal revenue curve would also shift to the right.

    PTS: 1   REF: 234

13. ANS: D
    A firm seeking to maximize its market share wants to sell as much as possible, even if this means less than maximum profits. They will stop increasing their output when total revenues start declining. This happens when marginal revenue equals zero.

    PTS: 1   REF: 234

14. ANS: C
    Profits are maximized when MR = MC. The markup pricing technique has to take into account marginal revenue's dependency on the elasticity of demand.

    PTS: 1   REF: 231

15. ANS: D
    The profit maximizing output level is given by MR = MC. For a perfectly competitive market, MR = P, so the profit maximizing condition becomes P = MC. All profit-maximizing points will be situated on the positively sloped side of the marginal cost curve – if they choose an output level on the negatively sloped side of the MC curve, profits will be minimized. Price has to exceed average variable cost or else the firm needs to shut down. This is enough for the firm to keep operating, since its other costs are sunk and they would be incurred whether the firm operates or not.

    PTS: 1   REF: 239

16. ANS: C
    The short-run marginal cost curve correctly reflects the supply behaviour of a profit maximizing firm when the firm is a price taker. A firm is a price taker when the demand curve it faces is infinitely elastic. If the elasticity of demand facing the firm is -3, the firm is not a price taker.

    PTS: 1   REF: 231

17. ANS: C
    The firms chooses its level of output so that P = MC. If at that level the price is also equal the average variable cost, the firms is just covering its variable costs – any price lower than that will force the firm to shut down in the short run, so the point is known as the shutdown point.

    PTS: 1   REF: 239

18. ANS: B
    It is profitable for a firm to increase its output as long as the incremental profit is positive. When the incremental profit becomes zero, profits can no longer be increased, which means that total profits have been maximized. "Incremental" profit is a synonym for "marginal" profit.

    PTS: 1   REF: 223

19. ANS: A
    The slope of the total revenue curve at a particular level of output shows the change in total revenues associated with a small change in output, which is equal to the marginal revenue by definition. The slope of a ray from the origin to the corresponding point on the total revenue curve shows the average revenue. Thus (a) is true and (b) is false. (c) is also false because the marginal revenue is not equal to the marginal cost at any point.

    PTS: 1   REF: 226

20. ANS: A
    When marginal revenue is greater than marginal cost an increase in output will be worthwhile for the firm, since the incremental profit is positive.

    PTS: 1   REF: 227

21. ANS: A
    If a grocery store is a price taker their marginal revenue for each additional pound of bananas is ¢50, which leads to a horizontal marginal revenue curve corresponding to the ¢50 per pound level.

    PTS: 1   REF: 228

22. ANS: C
    A profit maximizing firm will choose a level of output for which MR = MC. This happens when $21 – 4q = 1$. The firm will choose to sell $q = (21-1)/4 = 5$, or 5,000 DVDs. The price level corresponding to this output is given by the demand function: $q = 10.5 – 0.5P => P = 21 – 2q = 21 – 10 = 11$.

    PTS: 1   REF: 229

23. ANS: D
    The profit maximizing number of prints comes from the MR = MC condition: $24 – 0.4q = 4 => 0.4q = 20 => q = 50$. We can find the price from the demand function: $q = 120 – 5p => p = 24 – 0.2q = 24 – 0.2 \times 50 = 24 – 20 = 14$.

    PTS: 1   REF: 229

24. ANS: D

The marginal revenue for a price-taking firm is equal to the market price. Since $MR = P\left(1 + \dfrac{1}{e_{q,P}}\right)$ the

demand elasticity is - 8.

PTS: 1   REF: 231

25. ANS: B

The demand curve is inelastic at that particular point, so the firm will incur a loss by increasing output. They

should decrease output to increase profits. Since $MR = P\left(1 + \dfrac{1}{e_{q,P}}\right)$, MR will be equal to 10(1-2) = -10.

PTS: 1   REF: 231

26. ANS: B

The demand curve for ski passes in one of the resorts is more elastic that the market demand for all five resorts. A price increase in one of the resorts will determine some consumers to switch to a cheaper resort and still go skiing, and the total revenue of that resort will fall. A general price increase will limit the available substitutes substantially, and consumers who still want to go skiing will pay the higher price. If the market demand is inelastic total revenues in all the resorts will increase after the price increase.

PTS: 1   REF: 232

27. ANS: D

The demand and marginal revenue curves move together. A $200 coupon increases every student's willingness to pay for textbooks and leads to an upward shift of the demand curve. This also leads to an upward shift of the marginal revenue curve. Since the demand curve coincides with the average revenue curve, we also see an upward shift of the average revenue curve.

PTS: 1   REF: 234

28. ANS: A

A relatively elastic demand curve generates a positive marginal revenue and an increase in total revenue when prices decrease and more tickets are sold. Since the marginal cost is low, this increase in total revenues will be profitable for the airlines.

PTS: 1   REF: 235

29. ANS: B

A firm should shut down in the short run if its revenues cannot cover its variable costs. Sunk costs should not be considered in a short-run decision, since they are incurred whether the firm operates or not.

PTS: 1   REF: 237

30. ANS: D

See application 7.3 – "Why Is Drilling for Crude Oil Such a Boom and Bust Business?"

PTS: 1   REF: 240

31. ANS: C
The total anticipated time for two terms is: 200 + 20x2 + 20x0.5 + 20x2 = 200 + 40 + 10 + 40 = 290. The opportunity cost is 290x50 = 14500, or \$7250 per term. After having taught the course once the preparation costs are sunk. He will only need 10 preparation hours next term, in addition to the 40 hours spent lecturing. The opportunity cost is now (10 + 40)x\$50 = \$2500, so he should only teach next term if he receives at least \$2500.

PTS: 1   REF: 240

32. ANS: A
The short-run supply curve of a price-taking firm is given by the part of the short-run marginal cost curve situated above the minimum average variable cost curve. From the equations of the two curves we can see that the SMC curve is above the AVC curve for any price higher than 2. When the price is lower than 2 the firm will shut down (i.e. the quantity supplied will be equal to zero).

PTS: 1   REF: 239

33. ANS: C
Assume the profit maximizing output is 600. When the firms produces 10 units of output in the first plant and 100 in the second, the marginal cost in the first plant is 60 and the marginal cost of the second plant is 300. If they want to produce one more unit they should produce it in the first plant, since it generates a much lower increase in costs than if it were produced in the second plant (6x11 = 66 vs 3x101 = 303). Production in the first plant should be increased until marginal costs are equal in the two plants. When output level reaches 50 in the first plant, $MC_1 = 6x50 = 300 = MC_2 = 3x100$. The next unit of output should be produced in the second plant, since costs will only increase by 3x101 = 303, and not by 6x51 = 306 as in the first plant. Going back to the beginning, the condition which determines how output will be split between the two plants is $MC_1 = MC_2 \Leftrightarrow 6q_1 = 3q_2 \Leftrightarrow 2q_1 = q_2$. We also know that $q_1 + q_2 = 600$. Solving for q_1 and q_2 from these two equations yields $q_1 = 200$ and $q_2 = 400$. One third of the output will be produced in the first plant, and two thirds will be produced in the second plant.

PTS: 1   REF: 225

34. ANS: A
The profit maximizing conditions are $MC_1 = P$ and $MC_2 = P$, which yield $q_1 = 3$ and $q_2 = 9$. The total output produced in the two plants is 12 units.

PTS: 1   REF: 225

35. ANS: B
To find the profit-maximizing level of output for a price-taking firm we need to set P = MC, which yields $0.6q + 30 = 60 \Rightarrow q = 30/0.6 = 50$. The profits of the firm are
$\Pi = TR - TC = Pq - 0.3q^2 - 30q - 150 = 3000 - 750 - 1500 - 150 = 3000 - 2400 = 600$. When the price drops to \$20 the MC=P condition yields a negative q: 0.6q + 30 =20 => q = -10/0.6, so the firm should shut down (q=0).

PTS: 1   REF: 237

36. ANS: B
    The optimal point when the manager is also the owner of the firm is (P*, B*). Under the new ownership conditions the manager would choose (P**, B**) to maximize his utility, but this point is not attainable by the firm. When the manager opts for B** in benefits the profits of the firm will be P***. The change in ownership leads to a decrease in firm's profits from P* to P***, and an increase in manager's benefits from B* to B**.

    PTS: 1   REF: 243
37. ANS: A
    Franchise contracts control the principal-agent problem that would arise if the managers of Good Earth coffee places did not have ownership rights in the establishments they run, which would make them more interested in maximizing their own benefits to the detriment of company profits.

    PTS: 1   REF: 245
38. ANS: D
    See Application 7.4.

    PTS: 1   REF: 245
39. ANS: D
    The owners have to make sure that the manager pursues their interests and not only his own and also keep him interested in this contract rather than a contract offered by another firm.

    PTS: 1   REF: 247
40. ANS: D
    See Application 7.5.

    PTS: 1   REF: 247
41. ANS: A
    An increase in labour cost would shift the marginal cost curve up and leave the marginal revenue curve intact. Thus (b) and (c) are false.

    PTS: 1   REF: 248
42. ANS: D
    If the fee has already been paid it is a sunk cost and it should not influence the firm's profit maximizing decision. If the fee has not been paid yet, it is not sunk, and thus it should be part of the costs that need to be covered. If the fee cannot be covered from firm's revenues, then the firm should shut down for one year if this means that it would not have to pay the fee. Thus (a) and (b) are true. (c) is false because an additional fee cannot decrease a firm's marginal costs.

    PTS: 1   REF: 249
43. ANS: C
    The firm chooses its profit maximizing level of output by setting P = SMC. In our figure this corresponds to an output level equal to 0F. The firm should keep producing as long as the prevailing market price is as least as large as the minimum average variable cost, which is the shut-down price. This corresponds to 0A in our figure.

    PTS: 1   REF: 239

44. ANS: D

An increase in the price of a variable input leads to an upward shift of the short-run average variable cost curve. Since the shut-down price is equal to the minimum short-run average variable cost, the shut-down price increases due to this increase in the price of the variable input. This increase also leads to an upward shift of the firm's short-run marginal cost curve. Since the firm's supply function is given by the part of the short-run marginal cost curve situated above the shut-down price, the firm's supply curve also shifts up. An increase in the price of a fixed input shifts the short-run average total cost curve upwards, but leaves the short-run variable cost curve and the short-run marginal cost curve untouched, and therefore the supply curve of the firm is not affected by this change.

PTS: 1   REF: 239

45. ANS: D

A subsidy per worker hired and per unit of output from the government will decrease the firm's marginal cost. The institution of a per-unit tax on each unit the firm produces increases a firm's marginal cost.

PTS: 1   REF: 249

46. ANS: D

In the very short run there is no supply response.

PTS: 1   REF: 258

47. ANS: B

Supply is fixed in the very short run, but it can be varied in the short run. New firms can only enter the industry in the long run.

PTS: 1   REF: 258

48. ANS: A

For every price level, the quantity supplied on the market in the short-run is given by the sum of the quantities supplied by all the firms operating in that particular market. Since quantity is drawn on the horizontal axis, the market supply curve is given by the horizontal summation of each firm's short-run supply curve.

PTS: 1   REF: 261

49. ANS: C

In the short-run the market demand shifts outward and the supply curve remains unchanged. This leads to an increase in equilibrium price and quantity.

PTS: 1   REF: 263

50. ANS: B

Assume goods x and y are substitutes. When the price of good y falls the quantity demanded of y increases, and the demand for good x decreases (shifts in), so (b) is not a reason for an outward shift in demand.

PTS: 1   REF: 265

51. ANS: A

If a 1% increase in price leads to an increase in quantity supplied larger than 1% the supply curve is elastic.

PTS: 1   REF: 265

52. ANS: D
A very inelastic supply curve is relatively steep and a very elastic demand curve is relatively flat, so an inward shift in the supply curve will lead to a relatively small increase in price and a relatively large decrease in quantity.

PTS: 1   REF: 266

53. ANS: C
A very elastic supply curve is relatively flat, and a very inelastic demand curve is relatively steep. An outward shift in supply leads to a relatively large decrease in price and a relatively small increase in equilibrium quantity.

PTS: 1   REF: 266

54. ANS: A
The demand and supply curves have the same elasticity in absolute value (1%). This means that a shift in the demand curve will have the same percentage effect (in absolute value) on the equilibrium price and quantity. .A 10% increase in income is associated with a 20% increase in demand. If supply were perfectly elastic, this would have been associated with no change in price and a 20% increase in the equilibrium quantity. When demand and supply are unit elastic the equilibrium quantity will only raise by 10%, and the raise in price will also be 10%.

PTS: 1   REF: 267

55. ANS: B
If the industry is characterized by short-run profits more firms will have an incentive to enter the market. Thus the short-run market supply will increase, which corresponds to an outward shift of the short-run market supply curve.

PTS: 1   REF: 274

56. ANS: A
Profits are calculated as the difference between total revenues and total costs. Total revenues are given by the product of price and quantity, while total costs are the product of average total costs and quantity. If price is larger than average total cost the profit is positive.

PTS: 1   REF: 274

57. ANS: A
The profit maximizing condition which determines a firm's output choice is $P = MC$. A firm's profits are equal to $(P-ATC)q$. In the long run firms are free to enter the market and this drives long-run profits to zero. This happens when $P = ATC$. We also know that $P = MC$, so $ATC=MC$. This happens at the minimum point of the average total cost curve.

PTS: 1   REF: 272

58. ANS: C
For an increasing cost industry the long-run supply curve is upward sloping, so an increase in price is associated with an increase in quantity supplied. This determines the positive sign of the price elasticity of supply.

PTS: 1   REF: 278

59. ANS: C
The long-run elasticity of supply shows the percentage change in quantity supplied in the long run associated with a percentage change in price.

PTS: 1   REF: 278

60. ANS: A
It is believed that the costs incurred by infant industries will decrease in time and firms should be offered protection until this reduction in costs takes place.

PTS: 1   REF: 282

61. ANS: B
Supply is fixed in the very short run. Since each firm supplies 100 sq. feet, the market supply is 100x100 = 10,000. We can find the equilibrium price from the market demand equation: 10,000 = 15,000 – 500P ⟺ 500P = 15,000 – 10,000 = 5,000 => P = 5,000/500 = 10.

PTS: 1   REF: 258

62. ANS: B
The market supply is 100x100 = 10,000. The initial equilibrium price can be found from the market demand equation: 10,000 = 15,000 – 500P ⟺ 500P = 15,000 – 10,000 = 5,000 => P = 5,000/500 = 10. Since supply is fixed in the very short-run (i.e. the supply curve is vertical), the upward shift in demand translates into a $5 increase in the equilibrium price: P' = $10 + $5 = $15.

PTS: 1   REF: 258

63. ANS: A
The equilibrium price is determined by the market demand and supply curves:
$Q_D = Q_S \Leftrightarrow 15,000 - 500P = -1,000 + 300P \Leftrightarrow 16,000 = 800P \Rightarrow P = \$20$. The supply of an individual firm is $q_S = Q_s / 100 = -10 + 3P$. Since each of these firms is a price taker, they will supply
$q_S = -10 + 3x20 = 50$ feet of hardwood floor.

PTS: 1   REF: 262

64. ANS: A
The first firm will operate if the price is larger than 999/3 = 333, or else it will shut down. The second firm will operate at any price, since the quantity supplied is positive for any positive price. Thus the second firm will be the only supplier for a price under 333, so $Q_S^M = 199 + 10P$ for P<333. Both firms will operate when the price is over 333 and the market supply is given by the summation of the two supply curves:
$Q_S^M = -999 + 199 + 10P + 3P = -800 + 13P$.

PTS: 1   REF: 261

65. ANS: D
One firm's supply curve is given by its short-run marginal cost curve:
$$P = 0.0025q^2 + 0.2q + 4 = 0.05^2 q^2 + 2x0.05x2q + 4 = (0.05q + 2)^2 \Rightarrow \sqrt{P} = 0.05q + 2$$
$$\Rightarrow q_S = \frac{\sqrt{P} - 2}{0.05} = 20\sqrt{P} - 40.$$
If we multiply this by 200 we obtain the industry supply curve: $Q_S = 4000\sqrt{P} - 8000$.

PTS: 1   REF: 261

66. ANS: A
Crude oil is an input for gasoline, so an increase in the price of crude oil leads to an inward shift of the supply curve for gasoline, since the marginal cost of gasoline has gone up. Because demand is inelastic, this change will mainly lead to a higher price, and only to a slight decrease in equilibrium quantity. The increase in oil prices is passed on almost completely to consumers of gasoline in the form of higher prices.

PTS: 1   REF: 266

67. ANS: B
Technological improvements lead to an outward shift of the supply curve. Since demand is elastic, price will decrease only slightly compared to the increase in equilibrium quantity.

PTS: 1   REF: 266

68. ANS: A
An increase in the number of consumers is equivalent to an outward shift in demand. Since short-run supply is inelastic, this increase in demand mostly affects the price of mineral water, and not the quantity sold.

PTS: 1   REF: 267

69. ANS: C
If an outfit is out of style, its demand curve shifts in, since consumers' willingness to pay for that outfit has decreased. If the supply curve is relatively elastic, producers can quickly adjust the quantity they are willing to sell, and this leads to a relatively large change in equilibrium quantity, with a weaker impact on the equilibrium price.

PTS: 1   REF: 267

70. ANS: B
Demand equals supply at the equilibrium price: $1000 – 10P = 20P – 200 \Rightarrow 1200 = 30 P \Rightarrow P = 40$. The recycling levy reduces consumers' willingness to pay: $Q_D' = 1000 – 10(P+6) \Leftrightarrow Q_D' = 940 – 10P$. The new equilibrium condition is: $Q_D' = Q_S \Leftrightarrow 940 – 10P = 20P – 200 \Leftrightarrow 30P = 1140 \Rightarrow P = 38$.

PTS: 1   REF: 269

71. ANS: D
Unless the demand curve is perfectly inelastic, the price decreases by less than x cents. See Figure 1, Application 8.2.

PTS: 1   REF: 268

72. ANS: A
The elimination of the tax leads to a decrease in price and an increase in equilibrium quantity, thus leading to an increase in consumer surplus. The increase in quantity also leads to an increase in producer surplus. See Figure 1, Application 8.2.

PTS: 1   REF: 268

73. ANS: D
If one firm has lower costs (due to special technologies or resources) it will earn positive profits while the higher-cost firms will earn zero economic profits. Firms will only earn zero economic profits in a long-run equilibrium when their cost structures are identical.

PTS: 1   REF: 273

74. ANS: A
    If the entry of a new firm raises the costs of existing firms a higher equilibrium quantity will be associated with a higher equilibrium price.

    PTS: 1   REF: 276

75. ANS: D
    In a perfectly competitive market firms are price takers, so the demand curve faced by each of them is horizontal. An increase in demand leads to an increase in price in the short-run due to the upward sloping short-run market supply curve. New firms will enter the market until profits are driven to zero. Since the cost curves are not affected by the entry of new firms, the equilibrium price will not be affected either, so the long-run supply curve will be horizontal.

    PTS: 1   REF: 273

76. ANS: C
    Firms keep entering the industry until the profits equal zero. This happens when firms produce at their minimum average cost, i.e. 24 units at $10 per unit. Firms maximize their profits by setting P = MC, and at this cost-minimizing point the price is also equal to the minimum average cost. Thus the price of one unit will be $10, and each firm will produce 24 units in equilibrium. The total industry output is given by the market demand curve: Q = 3000 – 60x10 = 2400. The number of firms on the market is 2400 / 24 = 100.

    PTS: 1   REF: 273

77. ANS: A
    If the costs of a typical firm decrease after new firms enter the market, they will be able to charge lower prices and still remain on the market. An increase in demand will reduce the equilibrium price and increase the equilibrium quantity in the long run.

    PTS: 1   REF: 279

78. ANS: A
    If we calculate the inverses of these supply elasticities we obtain the following results: a 1% increase in the quantity of wheat supplied on the market in the long run is associated with a 1/0.03 = 33.33% increase in the price of wheat; a 1% increase in the quantity of crude oil supplied on the market in the long run is associated with a 1/0.75 = 1.33% increase in the price of crude oil. Thus (a) is true.

    PTS: 1   REF: 279

79. ANS: A
    A nearly infinite long-run supply elasticity tells us that an increase in the quantity supplied is associated with an infinitesimal increase in price, or that the long-run supply of aluminum was almost horizontal for the period under survey. This happens when the entry or exit of firms does not change the cost curves of the firms on the market.

    PTS: 1   REF: 279

80. ANS: C
    Firms will make zero profits in the long run. The long-run equilibrium price will be equal to the minimum value of the long-run average cost of an individual firm. We know that at this point the long-run average cost is equal to the long-run marginal cost, and we can use this condition to find the equilibrium quantity: $AC = MC \Leftrightarrow 0.05q - 5 + 500/q = 0.1q - 5 \Leftrightarrow 500/q = 0.05q \Rightarrow q^* = 100$. The long-run equilibrium price will be $P^* = MC (100) = 0.1q - 5 = 0.1 \times 100 - 5 = 10 - 5 = 5$.

    PTS: 1   REF: 270

81. ANS: B

The long-run equilibrium conditions are $P^* = AC$ and $P^* = MC$. This leads to $AC = MC \Leftrightarrow 0.05q - 5 + 500/q = 0.1q - 5 \Leftrightarrow 500/q = 0.05q => q^* = 100$, $P^* = \$5$. We can use the market demand to find the equilibrium number of firms: $Q^D = 100,000 - 10,000 \times 5 = 50,000$. Since each firm produces 100 units, there will be $50,000 / 100 = 500$ firms on the market.

PTS: 1   REF: 270

82. ANS: A

A firm's efficient scale of production corresponds to the level of output which minimizes its long-run average costs. At this level of output the long-run average cost is equal to the long-run marginal cost. The long-run average cost is: $AC (q) = TC(q) /q = 144/q + q$. $AC(q) = MC(q) => 144/q + q = 2q \Leftrightarrow 144/q = q => q^* = 12$.

PTS: 1   REF: 272

83. ANS: B

A constant returns to scale production function leads to a constant average cost, which is also equal to the marginal cost. Thus the two curves coincide and (I) is true. The number of firms is not well-defined because firms do not have an efficient scale of production, since their average cost is equal to their marginal cost for any output level.

PTS: 1   REF: 272

84. ANS: D   PTS: 1   REF: 278

85. ANS: B

Use the profit maximization condition (P=MC) and the required zero-profit condition (P=AC) to find the equilibrium price and quantity. $MC = AC \Leftrightarrow 6q = 768/q + 3q \Leftrightarrow 768/q = 3q \Leftrightarrow q^2 = 256 \Leftrightarrow q^* = 16$, $P^* = 6\times16 = 96$. We can find the number of firms on the market from the market demand. $Q^D = 304 + P = 304 + 96 = 400$ and since each firm produces 16 units the number of firms will be $400 / 16 = 25$.

PTS: 1   REF: 272

86. ANS: C

If the average cost curve is downward sloping at the output level obtained from the profit maximization condition (P = MC) the firm will not be able to cover its costs (since MC < AC on the downward-sloping part of the AC curve). A firm will never choose to produce this level of output in the long run. Thus (I) is false. If a competitive firm is currently producing where its short-run average cost is upward-sloping this firm is making economic profits. These profits will attract new firms on the market, so (II) is true.

PTS: 1   REF: 272

87. ANS: C

The tax leads to a downward shift of the market demand curve. In the short-run this will lead to a decrease in both price and the number of houses. In the long-run some firms will exit the market because of the negative economic profits. The market will reach a new equilibrium when the price level reaches the old price level, and fewer new houses are sold.

PTS: 1   REF: 273

88. ANS: D

See the discussion about "network externalities and supply curves" on page 278.

PTS: 1   REF: 281

89. ANS: B
Additional users to a network cause positive externalities, increasing the benefits of the users of that network. Thus the value of the network expands more rapidly than do the costs associated with it.

PTS: 1   REF: 280

90. ANS: C
The presence of a new firm increases the costs of all the other firms – this is a negative externality. If demand increases, firms will respond but their costs will increase and the price will not revert to the initial level, giving rise to an upward-sloping long-run supply curve.

PTS: 1   REF: 276

91. ANS: B
When mutually beneficial transactions cannot be completed some consumers do not trade even if their willingness to pay is higher than the marginal costs of producers. This generates a loss in total surplus (welfare) called deadweight loss.

PTS: 1   REF: 303

92. ANS: C
A welfare (total surplus) maximizing allocation of resources is economically efficient. The total surplus is equal to the sum of consumer and producer surplus, which needs to be maximized for welfare to be maximized.

PTS: 1   REF: 292

93. ANS: A
No trade is conducted if transaction costs exceed the difference between the maximum price consumers would be willing to pay and the minimum price producers need to receive.

PTS: 1   REF: 292

94. ANS: B
If a price lower than the equilibrium price is imposed the market will be characterized by excess demand, since producers lower the quantity they supply in response to the lower price. This excess demand is equivalent to a shortage on the market.

PTS: 1   REF: 295

95. ANS: B
Ricardian rents represent the returns obtained by the owners of scarce resources (a piece of artwork in our case) in a marketplace.

PTS: 1   REF: 291

96. ANS: B
In the short run the incidence of a sales tax is shared between the consumer and the producer. If demand is relatively elastic and supply is relatively inelastic the producer pays the bulk of the tax. If demand is relatively inelastic and supply is relatively elastic the consumer pays the bulk of the tax.

PTS: 1   REF: 299

97. ANS: C
If the supply curve is perfectly elastic the entire tax burden is absorbed by consumers, since the tax will lead to a higher price for consumers and no change in price for producers (see Figure 9.5 in the textbook). In general, the market participant with a less elastic response bears most of the tax.

PTS: 1   REF: 301

98. ANS: A
If an industry is characterized by decreasing costs in the long run, and the long-run supply curve is less elastic than the demand curve, the introduction of a tax will generate a price increase in the short-run, but the price will decrease in the long-run. Government services are not included in consumer surplus, so the tax does not generate an increase in consumer surplus ((b) is false). The market reaches a short-run equilibrium after the introduction of a tax, so the tax does not generate any shortages of the good being taxed ((c) is false). The price increases only for consumers – producers receive a lower price than before, while the difference is transformed into government revenues. Thus the price rise does not generate an increase in producer surplus ((d) is false).

PTS: 1   REF: 299

99. ANS: B
A tax leads to a transfer of surplus between consumers and producers and also to a loss of total surplus that is not transferred elsewhere. The latter is called deadweight loss, or excess burden of a tax.

PTS: 1   REF: 301

100. ANS: C
If demand or supply is inelastic the tax will result in a relatively small reduction in the equilibrium quantity, generating a relatively small deadweight loss.

PTS: 1   REF: 301

101. ANS: A
To the extent the services of transactions agents (brokers) are valuable to the parties in the transaction, demand and supply curves shift outward to reflect this value. Per unit transactions costs shift the demand and supply curves inward. The final change will be given by the strongest of the two changes. For example if consumer's benefits generated by the services of transactions agents are estimated to be $1,000 per unit and the transaction costs are $800 per unit, the demand curve shifts outward. If transaction costs are $1500, the demand curve shifts inward.

PTS: 1   REF: 304

102. ANS: C
Both consumers and producers will be affected by the decline in demand. The share of the burden attributed to producers will be primarily paid by the inputs that have inelastic supply curves, because these inputs experience the greatest drop in price when demand for their services declines. Therefore rent earned by elastically supplied inputs will decline by less than rent earned by inelastically supplied inputs.

PTS: 1   REF: 301

103. ANS: C
The total loss of surplus is smaller when demand and supply are relatively inelastic. Since total surplus is not maximized, the allocation of resources is inefficient. Setting different prices for the same inefficient output level does not change the total welfare, it only generates a different allocation of surplus between consumers and producers. Thus only (c) is false.

PTS: 1   REF: 292

104. ANS: B
     See Figure 9.7 in the textbook. Domestic consumers will experience an increase in surplus. Domestic prices will drop to the world price levels since consumers have access to these lower prices. Domestic producers cannot find another market since the world price is lower, and they cannot increase the quantity supplied without incurring losses. Only (b) is true.

     PTS: 1   REF: 306
105. ANS: B
     Protectionist measures lead to a transfer of a part of consumer surplus to domestic producers, so domestic producers benefit.

     PTS: 1   REF: 307
106. ANS: A
     Quotas reduce the amount of imports from the level that would occur with free trade to a level set by the government. IV is false because imports are only reduced, not eliminated. Because foreign firms will export less, they will have to look for more open markets elsewhere, so II is true. This will lead to a higher price compared to the free trade situation, so III is false. We assume the traded goods are homogenous and thus quotas will not affect their quality and I is false.

     PTS: 1   REF: 308
107. ANS: D
     Consider the figure below. When a quota is instituted the price increases from P_W, the world price, to P_R, the domestic price. There is a loss of domestic consumer surplus ($P_R E_2 E_1 P_W$), which is partially transferred to domestic producers ($P_R BAP_W$). Part of this consumer surplus is transformed into deadweight loss (ABC and FE_2E_1), and another part will end up in the hands of foreign producers, of owners of import licenses, or of the domestic government if a fee is charged for licenses. The equilibrium quantity decreases from Q_1 to Q_3. If this product is used with a complementary product, Y, the demand for Y decreases and the consumer surplus for Y also decreases. Thus (d) is false.
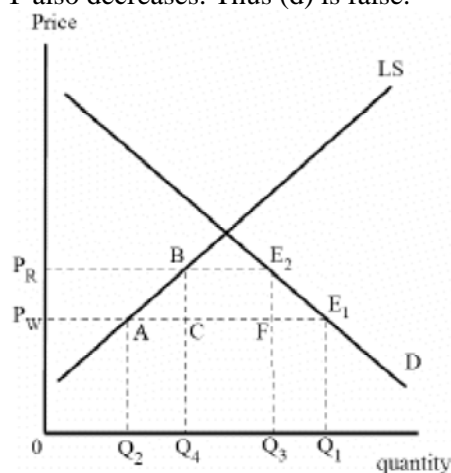
     PTS: 1   REF: 308

108. ANS: C

The market supply curve is positively sloped because the variable inputs the firm uses have diminishing returns as output increases. Since the firm charges a unique price for all the units of output sold on the market, and this price is equal to the marginal cost at the equilibrium level of output, the price they charge is higher than the marginal cost of all the other units. This generates producer surplus.

PTS: 1   REF: 289

109. ANS: A

If the cost curves of the firms in the industry remain constant as more firms enter the market and output increases, there will be no producer surplus in the long run. This happens because in the long-run equilibrium firms obtain no economic profits and have a horizontal long-run supply function. Any possible producer surplus has already been exploited when the market is in equilibrium, offering no incentive for new firms to enter the market.

PTS: 1   REF: 290

110. ANS: B

The low-cost firms have an advantage over the high-cost firms. In the long-run the price settles to a level that generates zero economic profits for high-cost firms and Ricardian rents for low-cost firms.

PTS: 1   REF: 290

111. ANS: B

In equilibrium $Q^D = Q^S \Leftrightarrow 1900 - 200P = 50P - 100 \Leftrightarrow 250P = 2000 \Rightarrow P^* = 8, Q^* = 300$. The demand function crosses the vertical axis at P = 9.5 and the supply function crosses the vertical axis at P = 2. The consumer surplus is given by the area below the demand curve and above the price, and the producer surplus is given by the area above the supply curve and below the price.

$$CS = \frac{(9.5 - 8)300}{2} = 225; PS = \frac{(8 - 2)300}{2} = 900.$$

PTS: 1   REF: 294

112. ANS: B

Given that the demand and supply functions are linear and that the producer surplus is larger than the consumer surplus we know that the supply curve must be steeper than the demand curve(in absolute value) at equilibrium. This means that the supply curve is less elastic, which makes producers bear most of the tax burden.

PTS: 1   REF: 301

113. ANS: D

All the above-mentioned restrictions can be analyzed by adapting the tariff diagram to the new situation. They will lead to a decrease in imports (compared to the free trade equilibrium), an increase in domestic production for the importing country, a surplus transfer from domestic consumers to domestic producers etc.

PTS: 1   REF: 307

114. ANS: A

The deadweight loss is represented by the area AEB in the figure below:

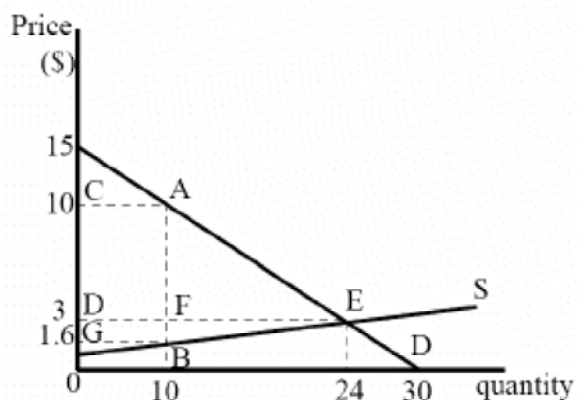$$DWL = AEB = \frac{(5-2.6)(24-20)}{2} = \frac{2.4x4}{2} = 4.8.$$
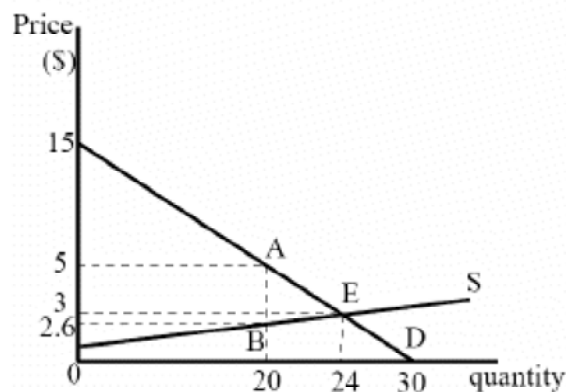
PTS: 1 REF: 294

115. ANS: C

The initial equilibrium: $Q^D = Q^S \Leftrightarrow 30 - 2P = 10P - 6 \Rightarrow P^* = 3, Q^* = 24$. If a quota of 10 litres of milk is imposed on this market, the price will rise from \$3 to \$10, since $Q^D = 10 = 30 - 2P \Rightarrow P^{**} = 10$. The transfer of surplus from consumers to producers is given by the area AFDC in the figure below:
$AFDC = (10 - 3)(10 - 0) = 70$.

PTS: 1 REF: 294

116. ANS: D

A binding price floor imposes a market price higher than the equilibrium price. At this higher price firms have an incentive to increase their quantity supplied, but consumers do not have a high enough willingness to pay to absorb this higher supply. The market is characterized by excess supply. The higher price leads to a lower quantity on the market and it also generates deadweight loss: some consumers are willing to pay more than producers want for their product, but the price floor eliminates this trade possibility. Since the new price is higher than the unrestrained price, part of the initial consumer surplus is transferred to producers.

PTS: 1 REF: 296

117. ANS: A

In the short-run firms cannot exit the industry when the tax is introduced. The price paid by consumers is higher than the previous equilibrium price, and the price received by producers is lower than the previous equilibrium price, which means that both consumers and producers cover the tax. In the long run firms can exit the industry, and the after-tax price returns to the initial equilibrium level if the cost curves are not affected, shifting the entire tax amount onto consumers.

PTS: 1   REF: 299

118. ANS: B

The new equilibrium is given by $6000 - 100P = 200(P - 1.5)$, since producers have to pay the tax. This leads to $P^* = \$21$, which is the new price paid by consumers. Since the initial equilibrium price is given by $6000 - 100P = 200P \Rightarrow P^* = 20$, we can show that two thirds of the tax is paid by consumers and one third is paid by producers, even though the tax is charged to producers.

PTS: 1   REF: 305

119. ANS: B

The initial equilibrium is given by: $Q^D = Q^S \Leftrightarrow 30 - 2P = 10P - 6 \Leftrightarrow 12P = 36 \Leftrightarrow P^* = 3, Q^* = 24$.
The new equilibrium is given by:
$30 - 2P = 10(P + 1.2) - 6 \Leftrightarrow 30 - 2P = 10P + 6 \Leftrightarrow 12P = 24 \Leftrightarrow P^* = 2, Q^* = 26$. We can see that the price decreases by \$1 and the quantity increases by 2 litres. Some consumers will now buy milk even though their willingness to pay is lower than the farmers' costs, since the village is paying for this difference. This creates deadweight loss: $DWL = \dfrac{(3.2 - 2)(26 - 24)}{2} = \$1.2$.

PTS: 1   REF: 304

120. ANS: D

The autarkic price level is given by $Q^D = Q^S \Leftrightarrow 1500 - 300P = 700P - 500 \Leftrightarrow P^* = \$2$, which is higher than the world price. When the country is open to international trade the \$1 world price will prevail. At this price domestic producers will supply $Q^S = 700 - 500 = 200$ units of X, while consumers demand $Q^D = 1500 - 300 = 1200$ units. The excess demand will be covered by imports, totaling 1000 units of good X. When a ¢50 tariff is imposed it is as if the world price increased to \$1.5. The domestic producers will supply $Q^S = 700 x1.5 - 500 = 550$, while the rest up to $Q^D = 1500 - 300 x1.5 = 1050$ will be covered from imports. The imports will amount to 1050 – 550 = 500 units of good X.

PTS: 1   REF: 307

121. ANS: B

The price of one unit of X is \$1.5. Domestic producers supply $Q^S = 700 x1.5 - 500 = 550$, while consumers are willing to buy $Q^D = 1500 - 300 x1.5 = 1050$. The country will import 1050 – 550 = 500 units of X. For each unit the government collects ¢50, so their revenues from this tariff will be 0.5 x 500 = \$250. Under free trade domestic producers supply $Q^S = 700 - 500 = 200$ units, while consumers are willing to buy $Q^D = 1500 - 300 = 1200$. The excess burden of the tariff is given by the deadweight loss created by this trade restriction: $DWL = \dfrac{0.5(550 - 200)}{2} + \dfrac{0.5(1200 - 1050)}{2} = \$125$.

PTS: 1   REF: 307

122. ANS: D

In autarky the equilibrium is at $Q^D = Q^S \Leftrightarrow 1500 - 300P = 700P - 500 \Leftrightarrow P^* = \$2, Q^* = 900$. Since the price is lower than the world price our country will export good X. At the world price of \$3 the domestic consumption is $Q^D = 1500 - 900 = 600$ and the domestic production is $Q^S = 2100 - 500 = 1600$ - the difference between production and domestic demand is exported. Total surplus increases by the triangle above the autarkic equilibrium point, below the world price level, and between the demand and supply curves:

$$\Delta TS = \frac{(3-2)(1600 - 600)}{2} = \$500$$

PTS: 1   REF: 307

123. ANS: A

When a country switches to an autarkic state from free trade they will encounter a loss of total surplus. If the country used to import a good, this loss in total surplus is a loss in consumer surplus. If the country used to export the good, the loss in total surplus is a loss in producer surplus. Since the change in total surplus is the same in the two countries, (a) is the correct answer.

PTS: 1   REF: 307

124. ANS: A

Any point between U_S^1 and U_J^1 on the contract curve can be reached through voluntary transactions from point A, since at least one of the consumers is better off and the other one is not worse off.

PTS: 1   REF: 328

125. ANS: A

At any of these two points (O_S and O_J) it is impossible to make one of the consumers better off without making the other consumer worse off. Thus they are both economically efficient and they belong to the contract curve.

PTS: 1   REF: 328

126. ANS: A

The ratio of labour to capital for good X always exceeds the ratio of labour to capital for good Y. It can be shown that this generates a convex contract curve (if labour is on the horizontal axis and capital on the vertical axis, with good X in the lower-left corner and Y in the upper-right corner). An increase in the production of X and a decrease in the production of Y can be represented by a movement on the contract curve from point A to point B. The slope of a ray from the origin to one of these points is given by the ratio of capital and labour used to produce the corresponding amount of X or Y. Since the contract curve is convex, the slope of the ray from the O_X origin to point A is smaller than the slope of the ray from the origin to point B, so the capital – labour ratio increases for good X. The slope of the ray from the O_Y origin to point A is also smaller than the slope of the ray from the origin to point B, so the capital – labour ratio also increases for good Y.

PTS: 1   REF: 328

127. ANS: A

Each output has to have the same rate of technical transformation among inputs used for the allocation of inputs to be efficient. If this condition does not hold, a better allocation of inputs (i.e. one that would increase each output) could be found. The other conditions are not required.

PTS: 1   REF: 328

128. ANS: B
All combinations on the production possibility frontier (PPF) are obtained from the same amount of inputs. Therefore total costs are constant along the PPF. The slope of the PPF represents the decrease in the amount of good Y (ΔY), associated with a certain decrease in the total cost of Y (MC_Y), necessary to produce one more unit of good X (ΔX), which is associated with an increase in the total cost of X (MC_X). So $\Delta TC = 0 =$

$MC_X \, \Delta X + MC_Y \, \Delta Y => -\dfrac{\Delta Y}{\Delta X} = \dfrac{MC_X}{MC_Y}$, and (b) is true.

PTS: 1   REF: 318

129. ANS: C
The rate of product transformation is given by the slope of the production possibility frontier, which shows exactly how production of one good can be substituted for another while still using a fixed supply of inputs efficiently.

PTS: 1   REF: 318

130. ANS: D
All the efficient combinations of corn and cloth are on the production possibility frontier. Since a fixed amount of inputs is used, total costs are constant when we move between two points on the production

possibility frontier. Thus $\Delta TC = 0 = MC_{corn}\Delta\,corn + MC_{cloth}\,\Delta cloth => -\dfrac{\Delta cloth}{\Delta corn} = \dfrac{MC_{corn}}{MC_{cloth}}$, and (d) is true.

PTS: 1   REF: 318

131. ANS: D
The elimination of diminishing returns to scale does not belong to the set of assumptions of the perfectly competitive model. The presence of public goods, imperfect price information and externalities would generate inefficient resource allocations.

PTS: 1   REF: 324

132. ANS: C
The presence of externalities results in a gap between market price and social marginal cost and leads to a misallocation of resources. If externalities are negative, too many units of output are produced if the firm ignored the social costs imposed by these externalities. If they are positive and the firms do not internalize them, the level of output will be lower than the socially efficient level.

PTS: 1   REF: 324

133. ANS: C
Under a perfectly competitive price system an efficient allocation of resources will result, but this does not guarantee equity, since the latter is more of a matter of social convention.

PTS: 1   REF: 325

134. ANS: C

An efficient allocation of resources is reached when total surplus is maximized and there is no deadweight loss. If prices are established by an impartial auctioneer the allocation will be efficient, since the auctioneer has no incentive to harm total surplus. If one individual acts as a perfect price discriminator, she will set the price of each unit of the good that is traded equal to the other individual's maximum willingness to pay. There will be no consumer surplus, but no deadweight loss either – the entire total surplus will be in the hands of the individual who sets the prices. Thus I and II are efficient. III is not efficient because a monopolist who can charge the other individual a single, utility maximizing price would generate deadweight loss on the market.

PTS: 1   REF: 328

135. ANS: B

The fundamental theorem of welfare economics guarantees than an efficient allocation of resources will be reached, but it does not guarantee that this allocation will be equitable. All three factors mentioned above will affect the position on the contract curve finally arrived at.

PTS: 1   REF: 328