# Econ8500_Monopoly

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

_____ 1. All monopolies exist because of
    a. firms' desire to maximize profits.
    b. failure of antitrust laws.
    c. barriers to entry.
    d. natural selection.

_____ 2. Which of the following is not a *technical barrier* to entry in a monopolized market?
    a. A patent.
    b. Decreasing average cost.
    c. A low cost method of production known only to the monopolist.
    d. Increasing returns to scale.

_____ 3. Which of the following is not a legal barrier to entry in a monopolized market?
    a. A patent.
    b. An exclusive franchise.
    c. Decreasing average cost.
    d. An exclusive license.

_____ 4. A natural monopoly
    a. is a monopoly in the production of raw materials.
    b. occurs when one firm can supply the entire market more cheaply than can a number of firms.
    c. is one result of a patent.
    d. necessarily involves inefficient pricing.

_____ 5. A profit-maximizing monopoly will produce that output for which
    a. marginal revenue equals price.
    b. average cost is minimized.
    c. marginal cost is minimized.
    d. marginal cost equals marginal revenue.

_____ 6. The supply curve for a monopolist is given by
    a. the firm's marginal cost curve above the average variable cost curve.
    b. the one point on the demand curve that corresponds to the quantity for which price is equal to marginal cost.
    c. the one point on the demand curve that corresponds to the quantity for which marginal revenue equals marginal cost.
    d. the entire demand curve above the point where price is equal to average cost.

_____ 7. A monopoly's economic profits are represented by
    a. (P - MC) x number of units sold.
    b. (P – AC) x number of units sold.
    c. (MR – P) x number of units sold.
    d. (MC - P) x number of units sold.

____ 8. The main difference between economic profits for a monopolist and for a competitive firm is that
   a. monopoly profits create major problems of equity whereas competitive profits do not.
   b. competitive profits exist only in the short run whereas monopoly profits may exist in the long run as well.
   c. monopoly profits represent a transfer out of consumer surplus whereas competitive profits do not.
   d. monopoly profits are usually larger than competitive profits.

____ 9. From the point of view of economic efficiency, output in a monopolized market is
   a. too high.
   b. perfect.
   c. too low.
   d. undesirable.

____ 10. If a monopoly is maximizing profits
   a. price will always be greater than average cost.
   b. price will always equal marginal cost.
   c. price will always be greater than marginal cost.
   d. price will always equal marginal revenue.

____ 11. The deadweight loss from a constant marginal cost monopoly refers to
   a. the portion of a monopolist's profits above the competitive profit level.
   b. the increase in price due to the monopolization of the market.
   c. the inefficient use of factors of production by a monopoly.
   d. the loss of consumer surplus due to the monopolization of a market that is not transferred to another economic actor.

____ 12. In a real world, a monopolist's costs will often be
   a. lower than for a firm in a competitive industry.
   b. equal to the costs of a firm in a similar competitive industry.
   c. higher than for a firm in a competitive industry.
   d. converted into profits for owners.

____ 13. For the practice of price discrimination to be successful, the monopoly must
   a. be able to prevent the resale of its product.
   b. face similar demand curves for various markets.
   c. have similar costs among markets.
   d. have a downward sloping marginal cost curve.

____ 14. A price discriminating monopolist having identical costs in two markets should charge a higher price in that market
   a. which has a higher demand.
   b. which has a more elastic demand.
   c. which has a less elastic demand.
   d. which has a higher marginal revenue.

____ 15. Perfect price discrimination
   a. is a common occurrence in situations with many buyers.
   b. occurs fairly often in situations with only a few buyers.
   c. is only observed in competitive markets.
   d. rarely occurs because firms do not have sufficient power to differentiate among specific buyers.

_____ 16. All of the following might explain a firm offering quantity discounts except:
    a. lower costs of handling large orders.
    b. an inelastic demand for the good.
    c. monopoly power in this market.
    d. adoption of a sales maximization strategy.

_____ 17. If the government requires a natural monopoly to price at marginal cost,
    a. monopoly firms will earn zero economic profits because the price of the good equals the cost of producing that good.
    b. monopoly firms will operate at a loss because $P < AC$.
    c. more firms will be able to enter the market.
    d. producer surplus will increase because the quantity supplied is greater.

_____ 18. One possible benefit of a monopoly is:
    a. a more efficient allocation of resources, since only one firm is needed to supply quantity demanded.
    b. greater opportunities for research due to long-run positive economic profits.
    c. the government is better able to ensure that it follows laws and guidelines because there is only one firm to monitor.
    d. goods and services are provided at a lower price than under perfect competition because of a monopoly's decreasing average cost curve.

_____ 19. A monopoly firm will earn zero profits if
    a. The average cost curve is tangent to the demand curve at the output level for which MR = MC.
    b. The equilibrium price is equal to the average cost.
    c. The demand curve crosses the average cost curve at its minimum point.
    d. Both (a) and (b).

_____ 20. Consider the following figure. The price set by a monopoly firm will be equal to _____, and the output level will be _____.
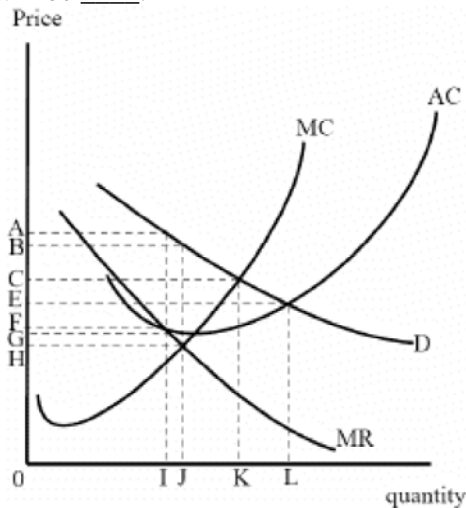


    a. 0B; 0J.
    b. 0F; 0I.
    c. 0H;0J.
    d. 0C; 0K.

____  21. Consider the following figure. The profit obtained by the monopoly firm is given by ____. The deadweight loss created by the monopoly is equal to ____.
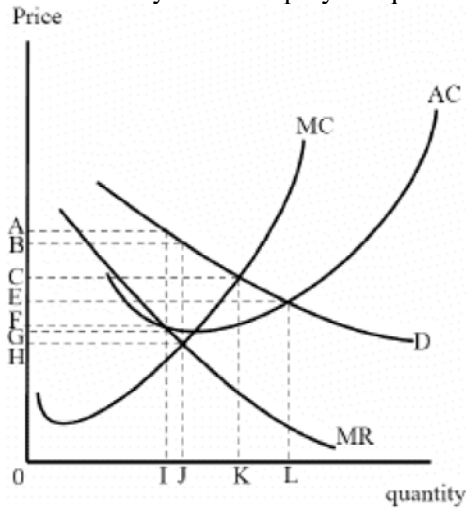


   a.  AFx0I; (AFxIK)/2.
   b.  BGx0J; (BHxJK)/2.
   c.  BHx0J; (BHxJK)/2.
   d.  0Ex0L; (AFxIK)/2.

____  22. Which of the following allocations cannot be economically efficient?
   a.  a monopoly firm selling all its output at one price.
   b.  a monopoly firm practicing perfect price discrimination.
   c.  a monopoly firm charging a two-part tariff.
   d.  All of the above.

____  23. Air Canada has a monopoly over direct flights between Calgary and Frankfurt am Main from October until May every year. Assume they have two types of passengers ("high-demand" and "low-demand"). The demand function for high-demand passengers is $P_1 = 1,900 - 5q_1$, and the demand function for low-demand passengers is $P_2 = 1,000 - q_2$. Assume the marginal cost of carrying an additional passenger is $500. If Air Canada can discriminate between the two types of passengers (by selling two types of tickets: business class and economy) their profit will amount to:
   a.  $100,500.
   b.  $126,750.
   c.  $160,500.
   d.  $190,000.

____  24. Air Canada has a monopoly over direct flights between Calgary and Frankfurt am Main from October until May every year. Assume they have two types of passengers ("high-demand" and "low-demand"). The demand function for high-demand passengers is $P_1 = 1,900 - 5q_1$, and the demand function for low-demand passengers is $P_2 = 1,000 - q_2$. Assume the marginal cost of carrying an additional passenger is $500. If they charge a uniform price their profit is $____ lower than under price discrimination (which could be achieved by selling business class and economy tickets).
   a.  $24,500.
   b.  $33,750.
   c.  $45,000.
   d.  $50,250.

____ 25. The deadweight loss measures
  a. the allocational harm caused by monopoly.
  b. the distributional harm caused by monopoly.
  c. both (a) and (b).
  d. none of the above.

____ 26. A monopolist faces a market demand curve given by P = 10,000 – 50Q. The monopolist's marginal revenue curve is given by MR = 10,000 – 100Q. If the monopolist produces at a constant marginal cost of MC = $100, the profit-maximizing output level is ____. At this output level the price is $____.
  a. 180; $1,000.
  b. 100; $5,000.
  c. 99; $5,050.
  d. 99; $100.

____ 27. A monopolist faces a market demand curve given by P = 10,010 – 50Q. The monopolist's marginal revenue curve is given by MR = 10,010 – 100Q. The monopolist produces at a constant marginal cost of MC = $10. The difference in total welfare between this situation and perfect competition is:
  a. $5,000.
  b. $5,010.
  c. $500,000.
  d. none of the above.

____ 28. The difference between perfect price discrimination and perfect competition is:
  a. perfect price discrimination is not economically efficient, while perfect competition is.
  b. under perfect price discrimination the monopolist appropriates all the surplus, while under perfect competition consumers also get a share of total surplus.
  c. the equilibrium output level is smaller under perfect price discrimination than under perfect competition.
  d. all of the above.

____ 29. "Buy one pair of jeans and get the second pair at half price." This statement
  a. is an example of a quantity discount.
  b. shows that the monopolist benefits from extracting surplus from consumers with a lower marginal valuation.
  c. is an example of second-degree price discrimination.
  d. all of the above.

____ 30. Why is popcorn so expensive at the movies?
  a. because theatre owners want to attract as many movie lovers as possible by charging a relatively low price for movie tickets, and then extract additional surplus from those who place a high value on the popcorn and movie combination.
  b. because theatre owners do not realize that it would be more profitable to set the price of popcorn equal to its marginal cost.
  c. because movie and popcorn consumers have a very elastic demand curve.
  d. none of the above.

____ 31. A monopolist who operates on two separate markets and has the same constant marginal cost in both markets charges
  a. a higher price in the market with a more elastic demand curve.
  b. a higher price in the market with a less elastic demand curve.
  c. the same price in both markets since his marginal cost is the same.
  d. a price equal to the marginal cost.

____ 32. Everyone must have "smart" electricity meters in Ontario by the end of 2010. They record the time of day that power is used, as well as the total amount consumed, and will allow the Energy Board to set a higher price for electricity consumed between 4pm and 11pm. This is an example of
   a. market separation, in which a higher price is imposed on the market with a less elastic demand curve.
   b. market separation, in which a higher price is imposed on the market with a more elastic demand curve.
   c. perfect price discrimination.
   d. a two-part tariff, which allows the Energy Board to enforce price discrimination by time of sale.

____ 33. The only movie theatre from a small town shows a comedy and an action movie every week and has four consumers. Consumers A and D are true devotees, willing to pay $15 for a comedy (A) or action movie (D) and nothing for the other option. Consumer B is willing to pay $11 for a comedy and $5 for an action movie. Consumer C is willing to pay $5 for a comedy and $11 for an action movie. If the monopoly movie theatre charges the same price for any movie ticket, this price would be $___. Which bundling scheme would bring more revenues?
   a. $11; $15 for a movie ticket sold separately, $20 if both a ticket for a comedy and one for an action movie are bought during the same week.
   b. $11; $15 for a movie ticket sold separately, $16 if both a ticket for a comedy and one for an action movie are bought during the same week.
   c. $5; $15 for a movie ticket sold separately, $20 if both a ticket for a comedy and one for an action movie are bought during the same week.
   d. $5; $15 for a movie ticket sold separately, $16 if both a ticket for a comedy and one for an action movie are bought during the same week.

____ 34. The only movie theatre from a small town shows a comedy and an action movie every week and has four consumers. Consumers A and D are true devotees, willing to pay $15 for a comedy (A) or action movie (D) and nothing for the other option. Consumer B is willing to pay $11 for a comedy and $5 for an action movie. Consumer C is willing to pay $5 for a comedy and $11 for an action movie. The theatre owner has thought of three pricing schemes: charge $11 for each ticket (uniform pricing), sell only bundles of comedy and action movie tickets for $16 (pure bundling), or sell single tickets for $15 and bundles for $16 (mixed bundling). The pricing scheme that generates the highest revenues is ____, followed by ____.
   a. mixed bundling; pure bundling.
   b. pure bundling; uniform pricing.
   c. mixed bundling; uniform pricing.
   d. pure bundling; mixed bundling.

____ 35. The price charged by a regulated natural monopoly is equal to marginal cost. The following statement is true:
   a. The monopolist is operating at a loss.
   b. The monopolist makes zero profits.
   c. The monopolist takes advantage of economies of scale and maximizes its profits.
   d. None of the above.

____ 36. A possible problem with a two-tier pricing system in the case of a natural monopoly would be
   a. the monopolist's inability to prevent low-price consumers from re-selling the good to high-price consumers.
   b. the fact that the monopolist no longer has an incentive to minimize costs.
   c. the fact that the monopolist cannot recover its costs.
   d. all of the above.

_____ 37. Under a rate of return regulation a natural monopoly firm
    a.   is forbidden to charge a price above marginal cost.
    b.   is forbidden to earn above a certain rate of return decided by the regulator.
    c.   earns a "fair" rate of return which can be easily determined by the regulator.
    d.   all of the above.

_____ 38. If a monopolist is charged a tax on each unit produced this will:
    a.   increase the equilibrium price.
    b.   decrease the equilibrium quantity.
    c.   increase the deadweight loss.
    d.   all of the above.

_____ 39. At a monopolist's equilibrium output and price level the market demand must be:
    a.   elastic.
    b.   inelastic.
    c.   unit elastic.
    d.   any of the above.

_____ 40. If a natural monopoly producing 10,000 units of a good is broken into 10 identical firms, each producing 1,000 units, the following statement is true:
    a.   the average cost of a small firm is smaller than or equal to the average cost of the monopoly firm.
    b.   the average cost of a small firm is smaller than the average cost of the monopoly firm.
    c.   the average cost of a small firm is equal to the average cost of the monopoly firm.
    d.   the average cost of a small firm exceeds the average cost of the monopoly firm.

_____ 41. The optimal length of a patent is
    a.   20 years.
    b.   25 years.
    c.   the length that equates the marginal benefits with the marginal costs of creating a monopoly through a patent.
    d.   none of the above.

_____ 42. Which of the following situations best resembles perfect price discrimination?
    a.   Air Canada's constantly changing online ticket prices.
    b.   Safeway's "buy one, get one free" policy.
    c.   Eddie Bauer's rewards program.
    d.   SportChek's skis and bindings bundles.

_____ 43. The following statement is true about a monopoly practicing perfect price discrimination:
    a.   it is economically efficient.
    b.   the total welfare is equal to the producer surplus.
    c.   the last unit is sold at a price equal to the marginal cost.
    d.   all of the above.

_____ 44. A monopoly has 1000 identical consumers. If it wants to implement a two-part tariff pricing scheme it should
    a.   charge a different price for each unit sold, according to every consumer's marginal willingness to pay.
    b.   charge a lump-sum fee equal to the marginal cost of the last unit sold, and set the per unit price equal to the consumer surplus.
    c.   charge a lump-sum fee equal to the consumer surplus of one consumer, and set the per unit price equal to the marginal cost.
    d.   none of the above.

_____ 45. A monopoly has two customers, consumer A and consumer B, and it has to charge each consumer the same lump-sum fee and the same per-unit price. Consumer A's demand function is $q_A = 80 - P$ and consumer B's demand function is $q_B = 100 - P$ The marginal cost is equal to \$10. A's consumer surplus is equal to

$$CS_A = \frac{1}{2}(80 - P)^2$$ and B's consumer surplus is equal to $$CS_B = \frac{1}{2}(100 - P)^2.$$ If the monopoly charges a fee

equal to A's consumer surplus it sells to both consumers and the profit-maximizing price is $P = \$20$. If it charges a fee equal to B's consumer surplus it only sells to B and the profit-maximizing price is \$10. The monopoly will choose the following two-part tariff:
   a.   a lump-sum fee equal to \$1,800 and a per-unit price equal to \$20.
   b.   a lump-sum fee equal to \$3,200 and a per unit price equal to \$20.
   c.   a lump-sum fee equal to \$2,450 and a per unit price equal to \$10.
   d.   a lump-sum fee equal to \$4,050 and a per unit price equal to \$10.

# Econ8500_Monopoly
# Answer Section

## MULTIPLE CHOICE

1. ANS: C
   Barriers to entry are the source of all monopoly power.

   PTS: 1          REF: 331
2. ANS: A
   A patent is a legal (not technical) barrier to entry in a monopolized market. Decreasing average costs, a low cost method of production known only to the monopolist and increasing returns to scale are technical barriers to entry.

   PTS: 1          REF: 332
3. ANS: C
   A decreasing average cost is a technical (not legal) barrier to entry. Patents and exclusive franchises and licenses are legal barriers to entry.

   PTS: 1          REF: 332
4. ANS: B
   If the production of a good exhibits a decreasing average cost total costs will be lower if the output is produced in one large firm rather than in several smaller firms. The large firm is a natural monopoly.

   PTS: 1          REF: 331
5. ANS: D
   The profit-maximizing condition is MR = MC, so (d) is true.

   PTS: 1          REF: 335
6. ANS: C
   The monopoly supply curve is only one point, corresponding to the quantity for which MR = MC.

   PTS: 1          REF: 335
7. ANS: B
   A monopoly's economic profits are given by the difference between the price of a unit of the good and its average cost, multiplied by the number of units sold.

   PTS: 1          REF: 336
8. ANS: B
   Firms operating on a competitive market earn zero profits in the long run. If profits were positive, more firms would enter the market, until profits would equal zero and an equilibrium would be established. Due to the presence of entry barriers and depending on the relative position of demand and average cost curves, monopoly firms might earn positive profits in the long run.

   PTS: 1          REF: 336

9. ANS: C
The level of output chosen by a monopolist ($Q^M$) is lower than the perfectly competitive output level ($Q^{PC}$), which maximizes total surplus and is economically efficient. The price set by the monopolist is higher than the perfectly competitive price. At any output level between $Q^M$ and $Q^{PC}$ there are consumers willing to pay more than the marginal cost of the product, but trade does not take place because it is prevented by the monopolist.

PTS: 1          REF: 340
10. ANS: C
A profit-maximizing monopoly firm will produce where MR = MC. The monopoly uses the demand curve to determine the corresponding price level. Since the demand curve is above the marginal revenue curve, the price is higher than the marginal cost. This makes (c) true and (b) and (d) false. The first option is false because price is not always greater than average cost – they are equal for a zero-profit monopoly firm.

PTS: 1          REF: 335
11. ANS: D
When a market is monopolized a part of consumer surplus is reallocated to the monopolist and a part is lost. Since we are considering a constant marginal cost monopoly firm, the entire deadweight loss originates from potential consumer surplus.

PTS: 1          REF: 340
12. ANS: C
Costs associated with erecting barriers to entry may make monopolists' costs exceed those in a competitive industry.

PTS: 1          REF: 342
13. ANS: A
The monopoly firm can price discriminate only if it can prevent arbitrage between consumers – otherwise low-price consumers will sell the product to high-price consumers for a price slightly lower than what the monopoly is charging.

PTS: 1          REF: 348
14. ANS: C
A less elastic demand curve allows the monopolist to set a higher price, since consumers are less sensitive to price changes. Since the monopolist has identical costs in the two markets, we have
$MR_1 = MC = MR_2 \Rightarrow P_1(1+1/e_1) = P_2(1+1/e_2)$. If $e_1 < e_2 \Rightarrow P_1 > P_2$.

PTS: 1          REF: 353
15. ANS: D
Perfect price discrimination requires information about each consumer's willingness to pay and the monopolist also has to be able to prevent arbitrage between consumers. This makes it a rare occurrence.

PTS: 1          REF: 348
16. ANS: B
If the demand curve is inelastic the profitability of a quantity discount would be very small. The increase in profits might be smaller than the costs of advertising this quantity discount.

PTS: 1          REF: 350

17. ANS: B
   A natural monopoly is characterized by increasing returns to scale (decreasing average cost) for the relevant output range. When the average cost is decreasing the marginal cost is lower than the average cost. If the natural monopoly firm has to price at marginal cost, which is lower than the average cost, it will operate at a loss, since profits are equal to (P – AC)q.

   PTS: 1          REF: 357

18. ANS: B
   Positive long-run economic profits could be an incentive for a monopoly firm to invest in research and development. This is the rationale behind the legal protection provided by patents.

   PTS: 1          REF: 332

19. ANS: D
   If the average cost curve is tangent to the demand curve at the equilibrium level of output the price set by the monopolist is equal to the average cost. Since profits are equal to (P*-AC)q*, the monopoly firm earns zero profits at this point and both (a) and (b) are correct.

   PTS: 1          REF: 337

20. ANS: A
   A monopolist will choose to produce a level of output for which MR = MC. This corresponds to 0J in Figure 1. The price level can be read off the demand curve, and it corresponds to 0B.

   PTS: 1          REF: 335

21. ANS: B
   The price set by the monopoly firm is equal to 0B and the equilibrium quantity is equal to 0J. The profit is given by the difference between the equilibrium price and average cost, times the number of units sold: (P* – AC) q* = (0B – 0G)0J = BG x 0J. The perfectly competitive equilibrium is (P** = 0C, q** = 0K), for which P = MC. The deadweight loss is the difference in total surplus between the two equilibria, and this is given by (BHxJK)/2.

   PTS: 1          REF: 335 | 340

22. ANS: A
   A monopoly selling all its output at one price generates deadweight loss, and this is not economically efficient. If a monopoly firm is able to perfectly price discriminate, each consumer will be charged their maximum willingness to pay – the monopolist appropriates all the surplus, but total surplus is maximized so the allocation is economically efficient. In the case of a two-part tariff, if consumers have identical demand curves, the monopolist may charge a fixed fee equal to the consumer surplus and a price equal to the marginal cost for each unit of the good. In this case the equilibrium output will be identical to the perfectly competitive output and total surplus will be maximized, with the monopolist appropriating the entire consumer surplus. This allocation is economically efficient.

   PTS: 1          REF: 347

23. ANS: C
Air Canada acts as a monopolist for the two types of passengers. The profit maximization conditions are:
$$MR_1 = MC \Leftrightarrow 1,900 - 10q_1 = 500 \Rightarrow q_1^* = 140, P_1^* = 1,900 - 5q_1^* = \$1,200,$$
$$\Pi_1 = (\$1,200 - \$500)140 = \$98,000$$
$$MR_2 = MC \Leftrightarrow 1,000 - 2q_2 = 500 \Rightarrow q_2^* = 250, P_2^* = 1,000 - q_2^* = \$750,$$
$$\Pi_2 = (\$750 - \$500)250 = \$62,500$$
$$\Pi = \Pi_1 + \Pi_2 = \$98,000 + \$62,500 = \$160,500$$

PTS: 1          REF: 353
24. ANS: B
If Air Canada can price discriminate between the two types of passengers profit maximization yields the following results:
$$MR_1 = MC \Leftrightarrow 1,900 - 10q_1 = 500 \Rightarrow q_1^* = 140, P_1^* = 1,900 - 5q_1^* = \$1,200,$$
$$\Pi_1 = (\$1,200 - \$500)140 = \$98,000$$
$$MR_2 = MC \Leftrightarrow 1,000 - 2q_2 = 500 \Rightarrow q_2^* = 250, P_2^* = 1,000 - q_2^* = \$750,$$
$$\Pi_2 = (\$750 - \$500)250 = \$62,500$$
$$\Pi = \Pi_1 + \Pi_2 = \$98,000 + \$62,500 = \$160,500$$
If Air Canada can only charge a unique price we have:
$$P_1 = 1,900 - 5q_1 \Rightarrow 5q_1 = 1,900 - P_1 \Rightarrow q_1 = 380 - \frac{1}{5}P_1$$
$$P_2 = 1,000 - q_2 \Rightarrow q_2 = 1,000 - P_2$$
The market demand is: $Q = q_1 + q_2 = 1,380 - \frac{6}{5}P \Rightarrow P = 1,150 - \frac{5}{6}Q \Rightarrow MR = 1,150 - \frac{5}{3}Q$
$$MR = MC \Leftrightarrow 1,150 - \frac{5}{3}Q = 500 \Leftrightarrow \frac{5}{3}Q = 650 \Leftrightarrow Q^* = \frac{1950}{5} = 390, P^* = 1,150 - \frac{5}{6}Q^* = \$825$$
$$\Pi = (\$825 - \$500)390 = \$126,750$$
Market separation increases Air Canada's profit by \$160,500 - \$126,750 = \$33,750.

PTS: 1          REF: 353
25. ANS: A
The deadweight loss represents a loss of mutually beneficial transactions between demanders and suppliers, showing the allocational harm caused by monopoly. The distributional effect refers to transfer of surplus from consumers to producers, not to an irrecoverable loss of surplus, so (b) is false.

PTS: 1          REF: 341
26. ANS: C
The profit maximization condition is MR = MC. This yields
$$10,000 - 100Q = 100 \Rightarrow Q^* = 99, P^* = 10,000 - 50x99 = \$5,050$$

PTS: 1          REF: 335

4

27. ANS: C
    The question is asking for the deadweight loss generated by the monopoly. For the monopolist, the equilibrium level of output and the price are given by the MR = MC profit maximizing condition:
    $10,010 - 100Q = 10 \Rightarrow Q^* = 100, P^* = 10,010 - 5000 = \$5,010.$ In a perfectly competitive environment the price would be equal to the marginal cost, which is \$10. The level of output on the market would be given by $10 = 10,010 - 50Q$, so Q = 200. The deadweight loss generated by the monopoly is:
    $DWL = (200 - 100)(\$5,010 - \$10) = 100 x \$5,000 = \$500,000$.

    PTS: 1          REF: 346
28. ANS: B
    The equilibrium level of output is the same under both regimes, and they are both efficient. The difference is that under perfect price discrimination the monopolist charges each consumer the maximum that person is willing to pay, appropriating all the consumer surplus.

    PTS: 1          REF: 347
29. ANS: D
    The statement is an example of a quantity discount, which is referred to as "second-degree price discrimination." The monopolist wants to exploit the case in which a consumer has a relatively high willingness to pay for the first pair of jeans, but a relatively low willingness to pay for the second pair.

    PTS: 1          REF: 350
30. ANS: A
    If all consumers were identical the theatre could charge an entry fee equal to the consumer surplus of an individual and then charge a price equal to the marginal cost for popcorn. There are two categories of movie goes: movie lovers, who do not mind not eating popcorn while watching a movie, and movie and popcorn lovers, for whom the two goods are complements. Because of this, theatre owners cannot extract all the consumer surplus through movie tickets. They charge a high price for popcorn to exploit the high willingness to pay of the consumers for whom the two goods are complements.

    PTS: 1          REF: 351
31. ANS: B
    The monopolist chooses the output for which MR = MC.
    $$MR_1 = MC = MR_2 \Leftrightarrow MR_1 = MR_2 \Leftrightarrow P_1\left(1 + \frac{1}{e_1}\right) = P_2\left(1 + \frac{1}{e_2}\right)$$
    If $e_1 > e_2 \Rightarrow P_1 < P_2$. The price will be higher in the market with a less elastic demand curve.

    PTS: 1          REF: 353
32. ANS: A
    The demand for electricity is less elastic between 4pm and 11pm compared to the rest of the day. This separation by time of sale allows the Energy Board to charge a higher price from the consumers with a less elastic demand curve.

    PTS: 1          REF: 353

33. ANS: B
    If the price of any movie ticket is $11, the movie theatre sells four tickets and earns $44 in revenues. If the price is $5 per ticket, the movie theatre sells six tickets: A and D get one ticket each, and B and C purchase two tickets each. Revenues amount to $30, lower than if the price were $11. Under the bundling scheme from (a) the movie theatre earns $30, since consumers B and C do not buy tickets ($15 is more than any of them is willing to pay for a single movie, and $20 is more than they are willing to pay for both movies). Under the bundling scheme from (b) the monopolist's revenues are $15 + $15 + $16 + $16 = $62, higher than the $44 obtained from the uniform pricing scheme.

    PTS: 1          REF: 356
34. ANS: C
    Revenues from uniform pricing: 4x$11 = $44. Revenues from pure bundling: 2x$16 = $32. Revenues from mixed bundling: 2x$15 + 2x$16 = $30 + $32 = $62.

    PTS: 1          REF: 356
35. ANS: A
    A natural monopoly firm has decreasing average costs for a large range of output. The marginal cost is lower than the average cost and if the monopolist charges a price equal to marginal cost profits are negative.

    PTS: 1          REF: 357
36. ANS: A
    Under a two-tier pricing system a monopoly is permitted to charge some users a high price while maintaining a low price for "marginal" users. If low-price consumers can re-sell the good to high-price consumers this pricing system will not function as intended.

    PTS: 1          REF: 358
37. ANS: B
    Under a rate of return regulation the monopolist can charge a price above marginal cost that will earn a "fair" return on investment (i.e. there is an upper limit for the price that can be charged). Much analytical effort is spent on defining the "fair" rate and examining how it might be measured.

    PTS: 1          REF: 360
38. ANS: D
    A tax charged on each unit produced leads to an upward shift of the marginal cost curve. This will lead to a higher price, lower quantity and an increase in the deadweight loss created by the monopoly.

    PTS: 1          REF: 364
39. ANS: A

    We know that $MR = P\left(1+\dfrac{1}{e}\right)$. Since the monopolist's equilibrium output and price level correspond to a positive marginal revenue the elasticity has to be lower than -1 (or higher than 1 in absolute value). This means that the market demand curve must be elastic.

    PTS: 1          REF: 335

40. ANS: D
    A natural monopoly is characterized by economies of scale or decreasing average costs: the lower the output the higher the average cost is. If the firm is broken into 10 small firms these firms will have a higher average cost than the monopoly firm.

    PTS: 1          REF: 357
41. ANS: C
    The optimal length of a patent is the one that equates marginal benefits with marginal costs. If marginal benefits are larger than marginal costs the patent length should be increased, and if marginal benefits are lower than marginal costs the patent length should be decreased.

    PTS: 1          REF: 332
42. ANS: A
    A firm is said to practice perfect price discrimination when each consumer is charged his or her maximum willingness to pay. By constantly changing prices and inducing uncertainty about their next price change, Air Canada manages to extract more of consumers' willingness to pay than if prices were held constant.

    PTS: 1          REF: 348
43. ANS: D
    A perfect price discrimination scheme allocates the entire surplus to the monopolist, since each consumer is charged his or her maximum willingness to pay. This pricing scheme is economically efficient because there is no deadweight loss: nobody can be made better off without making someone else worse off. Since selling an additional unit of output while the price charged is larger than the marginal cost increases profits, the monopolist will increase its output until the price of the last unit sold is equal to marginal cost. Selling one more unit will decrease profits (since the price charged would have to be lower than marginal cost), so the monopolist will stop at a level of output for which P = MC.

    PTS: 1          REF: 348
44. ANS: C
    A two-part tariff pricing scheme allows the monopoly to exploit every consumer's maximum willingness to pay. By charging a unit price equal to the marginal cost the monopoly sells the efficient level of output. Since this price is low enough to generate consumer surplus, the monopolist uses the lump-sum fee to extract this consumer surplus from its consumers. All consumers are identical, so the monopolist can set a unique lump-sum fee equal to the consumer surplus of one of them.

    PTS: 1          REF: 351
45. ANS: A
    If the monopolist charges $P = \$20 \Rightarrow CS_A = \$1,800$. The monopolist makes a profit of
    $\Pi = 2x1,800 + (80 - 20)x10 + (100 - 20)x10 = \$3,600 + \$600 + \$800 = \$5,000$. If it charges
    $P = \$10 \Rightarrow CS_B = \$4,050, \Pi = 4,050$. It is more profitable for the monopolist to charge a lump-sum fee equal to $1,800 and a per-unit price equal to $20.

    PTS: 1          REF: 351