MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Figure 15-4 shows the demand and cost curves for a monopolist.

1) Refer to Figure 15-4. What is the profit-maximizing/loss-minimizing output level?
   A) 600 units   B) 800 units   C) 940 units   D) 1,160 units

2) To be a natural monopoly a firm must
   A) have economies of scale that are so large that it can supply the entire market at a lower cost than two or more firms.
   B) have significant network externalities.
   C) control a key resource input.
   D) be in a government-regulated market.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

3) To maximize profit, a monopolist will produce and sell a quantity such that for the last unit sold, marginal revenue equals marginal cost, and charges a price given by the demand curve at that output level.

4) Merger guidelines developed by the Antitrust Division of the U.S. Department of Justice use four-firm concentration ratios as measures of concentration.
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

5) Market power refers to
   A) the ability of a firm to sell at a lower price than rival sellers.
   B) the ability of a firm to advertise its product and succeed in selling more output.
   C) the ability of a firm to charge a price higher than the marginal cost of production.
   D) the ability of consumers to dictate what products should be produced.

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

6) What happens to a monopoly's revenue when it sells more units of its product?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

7) A profit maximizing monopoly's price is
   A) not consistently related to price that would prevail if the market was perfectly competitive.
   B) less than the price that would prevail if the industry was perfectly competitive.
   C) greater than the price that would prevail if the industry was perfectly competitive.
   D) the same as the price that would prevail if the industry was perfectly competitive.

8) To maximize profit a monopolist will produce where
   A) marginal revenue is equal to marginal cost.
   B) revenue per unit is maximized.
   C) demand for its product is unit elastic.
   D) average total cost is equal to average revenue.

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

9) Explain why the monopolist has no supply curve?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

10) Economic efficiency requires that a natural monopoly's price be
    A) equal to the lowest price the firm can charge and still make a normal profit.
    B) equal to average variable cost where it intersects the demand curve.
    C) equal to average total cost where it intersects the demand curve.
    D) equal to marginal cost where it intersects the demand curve.

11) Many biologic drug manufacturers are pushing for patent protection to be extended to 12 years before generics are allowed to be introduced to the market. This reflects which of the following barriers to entry?
    A) entry blocked by government action
    B) control of a key resource
    C) network externalities
    D) economies of scale creating a natural monopoly

12) Governments grant patents to encourage
    A) competition.
    B) research and development on new products.
    C) low prices.
    D) firms to form public enterprises.
13) A monopoly is characterized by all of the following except
A) there are no close substitutes to the firm’s product.
B) the firm has market power.
C) there are only a few sellers, each selling a unique product.
D) entry barriers are high.

Table 15-2

<table>
<thead>
<tr>
<th>Quantity per Day (cases)</th>
<th>Price per Case</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$16</td>
<td>$7.00</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>9.50</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>11.00</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
<td>12.00</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>14.50</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>17.50</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>21.00</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>25.00</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>30.00</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>35.50</td>
</tr>
</tbody>
</table>

The government of a small developing country has granted exclusive rights to Linden Enterprises for the production of plastic syringes. Table 15-2 shows the cost and demand data for this government-protected monopolist.

14) Refer to Table 15-2. What is the profit-maximizing quantity and price for the monopolist?
A) Quantity = 10 cases, Price =$7
B) Quantity = 8 cases, Price =$9
C) Quantity = 9 cases, Price =$8
D) Quantity = 7 cases, Price =$10

15) In a natural monopoly, throughout the range of market demand
A) marginal cost is above average total cost and pulls average total cost upward.
B) there are diseconomies of scale.
C) marginal cost is below average total cost and pulls average total cost downward.
D) average total cost is above marginal cost and pulls marginal cost upward.

16) Because a monopoly’s demand curve is the same as the market demand curve for its product
A) the monopoly is a price taker.
B) the monopoly must lower its price to sell more of its product.
C) the monopoly’s average total cost always falls as it increases its output.
D) the monopoly’s marginal revenue equals its price.

17) A monopolist’s profit-maximizing price and output correspond to the point on a graph
A) where total costs are the smallest relative to price.
B) where average total cost is minimized.
C) where marginal revenue equals marginal cost and charging the price on the market demand curve for that output.
D) where price is as high as possible.

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

18) If a monopolist’s price is $50 at the output where marginal revenue equals marginal cost and average total cost is $43, then the incremental profit from the last unit sold is $7.
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

19) To maximize profit a monopolist will produce where
   A) average total cost is equal to average revenue.
   B) demand for its product is unit elastic.
   C) marginal revenue is equal to marginal cost.
   D) revenue per unit is maximized.

20) Economic efficiency requires that a natural monopoly’s price be
   A) equal to marginal cost where it intersects the demand curve.
   B) equal to the lowest price the firm can charge and still make a normal profit.
   C) equal to average total cost where it intersects the demand curve.
   D) equal to average variable cost where it intersects the demand curve.

21) For decades, the NCAA restricted the number of college football and basketball games that could be televised, and in 1982 the University of Georgia and the University of Oklahoma sued the NCAA under the federal antitrust laws. In 1984, the Supreme Court decided the case
   A) against the NCAA, citing that the NCAA did not control what television networks put on the air.
   B) for the NCAA, citing the fact that belonging to the NCAA was voluntary.
   C) against the NCAA, citing explicit collusion among the larger colleges.
   D) against the NCAA, citing anticompetitive practice.

22) In the United States, government policies with respect to monopolies and collusion are embodied in
   A) the Supreme Court.
   B) antitrust laws.
   C) common law, which the United States adopted from English law.
   D) the U.S. Constitution.
Figure 15-3 above shows the demand and cost curves facing a monopolist.

23) Refer to Figure 15-3. What happens to the monopolist represented in the diagram in the long run?  
   A) If the cost and demand curves remain the same, it will exit the market.  
   B) It will be forced out of business by more efficient producers.  
   C) It will raise its price at least until it breaks even.  
   D) The government will subsidize the monopoly to enable it to break even.
24) Refer to Figure 15-13. From the monopoly graph above, identify the area representing the deadweight loss. Would the deadweight loss be larger if the demand curve was more elastic or less elastic?

25) There are two firms in the residential paint industry, Cool Shades (C) and Warm Hues (W). They collude to share the market equally. They jointly set a monopoly price and split the quantity demanded at that price. Here are their options:

   i. They continue to collude (no cheating) and make $12 million each in profits.
   ii. One firm cheats and the other does not. The firm that cheats makes a profit of $14 million whereas the firm that doesn’t makes a profit of $9 million.
   iii. They both cheat and each firm makes a profit of $7 million.

   a. Construct a payoff matrix for these two firms.
   b. How does this situation relate to the prisoner’s dilemma?
   c. If each firm acted noncooperatively, how much profit would each make?
   d. Are the firms better off colluding (with no cheating) or competing? Explain.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

26) An example of a barrier to entry is
   A) high profits.  
   B) superior technological knowledge.  
   C) product differentiation.  
   D) increasing marginal costs.
A dominant strategy is one that a firm is forced into following by government policy. Involves colluding with rivals to maximize joint profits. Is one that is the best for a firm, no matter what strategies other firms use. Involves deciding what to do after all rivals have chosen their own strategies.

In most business situations where firms compete, often they can escape the prisoner’s dilemma and reach the most profitable outcome. Which of the following is a reason for this?

Most games are one-shot games so firms learn from their mistakes. Firms are constantly improving their products and anticipating changing consumer tastes. Firms engage in aggressive advertising to overcome the barriers to loyalty. Most games are repeated games and firms can employ retaliation strategies against those who do not cooperate.

The profit-maximizing level of output and the profit-maximizing price for an oligopolist cannot be calculated when we don’t know what the minimum efficient scale in the oligopolist’s industry is. The type of barrier to entry that exists in the oligopolist’s industry. The demand curve and the marginal revenue curve of the oligopolist. What the concentration ratio for the oligopolist’s industry is.

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

Explain why member firms of a cartel like OPEC have incentives to agree to a low cartel production level and then produce more than its quota.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Which of the following is the best example of an oligopolistic industry?

A) the beauty products industry
B) the beef market
C) the pharmaceutical industry
D) public education

A Nash equilibrium is reached when each player chooses the best strategy for himself, given the other strategies chosen by the other players in the group. Reached when each player chooses the best strategy for himself and for the group. An equilibrium comprising non-dominant strategies only. Reached when an oligopoly’s market demand and supply intersect.

In which of the following cartels is total cartel profit likely to be the highest?

A cartel made up of equal sized firms each producing different quantities of a differentiated product. A cartel made up of firms of various sizes each producing the same quantity of a differentiated product. A cartel made up of identical firms each producing the same quantity of a homogeneous product. A cartel made up of firms of various sizes each producing different quantities of a homogeneous product.
34) A four-firm concentration ratio measures
   A) how the four largest firms became so concentrated.
   B) the fraction of an industry’s sales accounted for by the four largest firms.
   C) the fraction of employment of the four largest firms in an industry.
   D) the production of any four firms in an industry.

*Table 14-8*

<table>
<thead>
<tr>
<th>Brawny Juice’s (B) Strategy</th>
<th>Power Fuel’s (P) Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Price</td>
</tr>
<tr>
<td>High Price</td>
<td>P: $12m</td>
</tr>
<tr>
<td></td>
<td>B: $12m</td>
</tr>
<tr>
<td>Low Price</td>
<td>P: $4m</td>
</tr>
<tr>
<td></td>
<td>B: $16m</td>
</tr>
</tbody>
</table>

Two rival oligopolists in the athletic supplements industry, the Power Fuel Company and the Brawny Juice Company, have to decide on their pricing strategy. Each can choose either a high price or a low price. Table 14-8 shows the payoff matrix with the profits that each firm can expect to earn depending on the pricing strategy it adopts.

35) Refer to Table 14-8. Which of the following is true?
   A) Brawny Juice’s dominant strategy is to select a high price.
   B) Power Fuel’s dominant strategy is to select a low price.
   C) Power Fuel does not have a dominant strategy.
   D) Brawny Juice does not have a dominant strategy.
1) A
2) A
3) TRUE
4) FALSE
5) C

6) The monopolist must lower its price to sell more. Two things happen when a monopolist lowers its price. First, revenue will tend to rise as the monopolist sells more units and second, revenue tend to fall because less revenue is received from each unit than the amount received at the higher price. The total effect on total revenue could be an increase, a decrease, or no change in total revenue.

7) C
8) A

9) A supply curve shows the relationship between the price of a product and the quantity that suppliers are willing and able to supply. The monopolist selects its profit-maximizing output by equating marginal revenue to marginal cost and takes the price dictated by the demand curve. Thus, there is no array of prices and quantities supplied.

10) D
11) A
12) B
13) C
14) D
15) C
16) B
17) C
18) FALSE
19) C
20) A
21) D
22) B
23) A

24) The deadweight loss =area C +D. The less elastic is the demand curve, the greater market power the firm has, the bigger is the difference between the marginal benefit (which equals the price) and marginal cost of the last unit produced and greater is the deadweight loss due to the monopoly.

25) a. The payoff matrix:

<table>
<thead>
<tr>
<th>Warm Hues' (W) Strategies</th>
<th>Cool Shades' (C) Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheat</td>
<td>C: $7 million</td>
</tr>
<tr>
<td></td>
<td>W: $7 million</td>
</tr>
<tr>
<td>Don't Cheat</td>
<td>C: $9 million</td>
</tr>
<tr>
<td></td>
<td>W: $14 million</td>
</tr>
<tr>
<td></td>
<td>C: $12 million</td>
</tr>
<tr>
<td></td>
<td>W: $12 million</td>
</tr>
</tbody>
</table>

b. With a prisoner's dilemma, cooperative behavior - each prisoner standing firm without admitting to anything - leads to the best outcome for each player. But each player stands to gain by cheating. Similarly, in this case, each firm has the potential to make a profit of $14 million ($2 million above the outcome with collusion) if it unilaterally increases output. But if both acted on this incentive, then each ends up with only $7 million in profit. This outcome is inferior to cooperation.

c. Each firm has the potential to make a profit of $14 million if one cheats and the other does not. But if both cheat, then profits fall to $7 million each.

d. If they colluded (no cheating), each firm stands to make $12 million, an outcome which is superior to the cheating outcome.
26) B
27) C
28) A
29) C
30) A low cartel production level results in a high market price for oil. Thereafter, each firm has an incentive to unilaterally cheat on the agreement by producing beyond its quota. Of course, ultimately if everyone cheats then the price of oil will fall, but at least for a while some members will earn higher profits than they would if they had adhered to their quotas.
31) C
32) A
33) C
34) B
35) B