1. In the above diagram it is assumed that:
   A. some costs are fixed and other costs are variable.
   B. all costs are variable.
   C. the law of diminishing returns determines the shape of the cost curve.
   D. marginal product first falls, but ultimately rises as output is increased.

2. To the economist total cost includes:
   A. explicit and implicit costs, including a normal profit.
   B. neither implicit nor explicit costs.
   C. implicit, but not explicit, costs.
   D. explicit, but not implicit, costs.

3. If a firm increases all of its inputs by 10 percent and its output increases by 15 percent, then:
   A. it is encountering diseconomies of scale.
   B. the law of diminishing returns is taking hold.
   C. it is encountering economies of scale.
   D. the firm's long-run ATC curve will be rising.
4. Refer to the above diagram. The profit-maximizing level of output for this firm:
A. is at point \( a \).
B. is at point \( b \).
C. is at point \( c \).
D. cannot be determined from the information given.

5. When a firm does more of something, it gets better at it. This learning-by-doing is:
A. a source of diseconomies of scale.
B. called the principle of natural progression.
C. a source of economies of scale.
D. called "spreading the overhead."

Answer the next question(s) on the basis of the following cost data:

<table>
<thead>
<tr>
<th>Output</th>
<th>Average fixed cost</th>
<th>Average variable cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$50.00</td>
<td>$100.00</td>
</tr>
<tr>
<td>2</td>
<td>25.00</td>
<td>80.00</td>
</tr>
<tr>
<td>3</td>
<td>16.67</td>
<td>66.67</td>
</tr>
<tr>
<td>4</td>
<td>12.50</td>
<td>65.00</td>
</tr>
<tr>
<td>5</td>
<td>10.00</td>
<td>68.00</td>
</tr>
<tr>
<td>6</td>
<td>8.37</td>
<td>73.33</td>
</tr>
<tr>
<td>7</td>
<td>7.14</td>
<td>80.00</td>
</tr>
<tr>
<td>8</td>
<td>6.25</td>
<td>87.50</td>
</tr>
</tbody>
</table>
6. Refer to the above data. The marginal cost curve would intersect the average variable cost curve at about:
A. 2 units of output.
B. 4 units of output.
C. 6 units of output.
D. 7 units of output.

7. Refer to the above diagram. If labor is the only variable input, the average product of labor is at a:
A. minimum at point b.
B. maximum at point b.
C. maximum at point a.
D. maximum at point c.

8. (Last Word) Which of the following sayings relates most closely to the idea of sunk costs:
A. Don't cry over spilt milk.
B. He who hesitates is lost.
C. A bird in the hand is worth two in the bush.
D. Show me the money.

9. Accounting profits are typically:
A. greater than economic profits because the former do not take explicit costs into account.
B. equal to economic profits because accounting costs include all opportunity costs.
C. smaller than economic profits because the former do not take implicit costs into account.
D. greater than economic profits because the former do not take implicit costs into account.

10. Total cost minus total variable cost equals:
A. average fixed cost.
B. total fixed cost.
C. average variable cost.
D. marginal cost.

11. A firm's total variable cost will depend on:
A. the prices of variable resources.
B. the production techniques that are used.
C. the level of output.
D. all of the above.
Answer the next question(s) on the basis of the following output data for a firm. Assume that the amounts of all nonlabor resources are fixed.

<table>
<thead>
<tr>
<th>Number of workers</th>
<th>Output (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>90</td>
</tr>
<tr>
<td>3</td>
<td>126</td>
</tr>
<tr>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td>5</td>
<td>165</td>
</tr>
<tr>
<td>6</td>
<td>180</td>
</tr>
</tbody>
</table>

12. Refer to the above data. Average product is at a maximum when:
A. five workers are hired.
B. four workers are hired.
C. three workers are hired.
D. two workers are hired.

13. Which of the following is not correct?
A. Where marginal product is greater than average product, average product is rising.
B. Where total product is at a maximum, average product is also at a maximum.
C. Where marginal product is zero, total product is at a maximum.
D. Marginal product becomes negative before average product becomes negative.
14. As the firm in the above diagram expands from plant size #3 to plant size #5, it experiences:
A. increasing returns.
B. economies of scale.
C. diseconomies of scale.
D. constant costs.

15. The short-run average total cost curve is U-shaped because:
A. average fixed costs decline continuously as output increases.
B. of increasing and diminishing returns.
C. of economies and diseconomies of scale.
D. minimum efficient scale is encountered.

16. Because the marginal product of a variable resource at first increases and then decreases as the output of the firm is increased:
A. total cost at first increases at a decreasing rate and then increases at an increasing rate.
B. total variable cost at first increases at an increasing rate and then increases at a decreasing rate.
C. average total cost at first increases and then diminishes.
D. average fixed cost will rise beyond the point of diminishing returns.

17. Refer to the above data. Diminishing marginal returns become evident with the addition of the:
A. sixth worker.
B. fourth worker.
C. third worker.
D. second worker.

18. Economies and diseconomies of scale explain:
A. the profit-maximizing level of production.
B. why the firm's long-run average total cost curve is U-shaped.
C. why the firm's short-run marginal cost curve cuts the short-run average variable cost curve at its minimum point.
D. the distinction between fixed and variable costs.
19. Refer to the above data. When total product is diminishing, marginal product is:
3
A. positive and increasing.
B. positive and decreasing.
C. constant.
D. negative.

20. Total fixed cost (TFC):
A. falls as the firm expands output from zero, but eventually rises.
B. falls continuously as total output expands.
C. varies directly with total output.
D. does not change as total output increases or decreases.

21. Which of the following statements is correct?
A. Average total cost is the difference between average variable cost and average fixed cost.
B. Marginal cost measures the cost per unit of output associated with any level of production.
C. When marginal product rises, marginal cost must also rise.
D. Marginal cost is the price or cost of an extra variable input (for example, an additional worker) divided by its marginal product.
22. Refer to the above graph. Which one of the following would cause a move from point \( d \) to point \( e \) along short-run average total cost curve \( ATC_2 \)?
A. diminishing marginal returns
B. an increase in the wage rate
C. a decrease in the wage rate
D. increasing marginal returns

Use the following cost information for the Creamy Crisp Donut Company to answer questions 16-23:
Entrepreneur's potential earnings as a salaried worker = $50,000
Annual lease on building = $22,000
Annual revenue from operations = $380,000
Payments to workers = $120,000
Utilities (electricity, water, disposal) costs = $8,000
Entrepreneur's potential economic profit from the next best entrepreneurial activity = $80,000
Entrepreneur's forgone interest on personal funds used to finance the business = $6,000

23. Refer to the above data. Creamy Crisp's total economic costs (explicit + implicit costs, including a normal profit) are:
A. $286,000.
B. $150,000.
C. $94,000.
D. $156,000.
Answer the next question(s) on the basis of the following information:

<table>
<thead>
<tr>
<th>Number of workers</th>
<th>Total product</th>
<th>Marginal product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24. Refer to the above data. When two workers are employed:
A. total product is 20.
B. total product is 18.
C. average product is 10.
D. total product cannot be determined from the information given.

25. Other things equal, if the fixed costs of a firm were to increase by $100,000 per year, which of the following would happen?
A. Marginal costs and average variable costs would both rise.
B. Average fixed costs and average variable costs would rise.
C. Average fixed costs and average total costs would rise.
D. Average fixed costs would rise, but marginal costs would fall.

26. If a profitable firm's fixed costs somehow were zero:
A. MC and ATC would be equal at all levels of output.
B. AFC would become negative as output increases.
C. AVC and ATC would coincide.
D. ATC would be zero at all output levels.

27. Diseconomies of scale:
A. pertain to the long run.
B. are synonymous with diminishing returns.
C. pertain to the short run.
D. are synonymous with increasing returns.

28. Which of the following definitions is correct?
A. Accounting profit + economic profit = normal profit.
B. Economic profit - accounting profit = explicit costs.
C. Economic profit = accounting profit - implicit costs.
D. Economic profit - implicit costs = accounting profits.
29. If the total variable cost of 9 units of output is $90 and the total variable cost of 10 units of output is $120, then:
A. the average variable cost of 10 units is $10.
B. the average variable cost of 9 units is $10.
C. the marginal cost of the tenth unit is $90.
D. the firm is operating in the range of increasing marginal returns.

30. Refer to the above diagram. For output level $Q$, per unit costs of $B$ are:
A. unobtainable and imply the inefficient use of resources.
B. unobtainable, given resource prices and the current state of technology.
C. obtainable, but imply the inefficient use of resources.
D. obtainable and imply least-cost production of this output.
Pre-Test Chapter 20 ed17 Key

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7. B</td>
<td>17. C</td>
<td>27. A</td>
</tr>
</tbody>
</table>