AP Microeconomics Unit 3: Production, Cost, and the Perfect Competition Model
Practice Test

Question 1

The table below shows the total output Bart's Beans produces with differing amounts of labor.

<table>
<thead>
<tr>
<th>Units of labor used</th>
<th>Total product of labor ($TP_L$)</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>25</td>
</tr>
<tr>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>4</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>70</td>
</tr>
<tr>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>7</td>
<td>75</td>
</tr>
<tr>
<td>8</td>
<td>70</td>
</tr>
</tbody>
</table>

At what quantity is the marginal product of labor ($MP_L$) equal to zero?

A. 8
B. 7
C. 3
D. 0
E. 4

Question 2

The Merchant of Tennis is a firm that produces tennis balls. The only variable input for this firm is labor.

What would cause the Merchant of Tennis’ total product of labor curve to shift up?

A. a decrease in labor
B. an increase in labor
C. an increase in its amount of capital
D. a decrease in natural resources
E. a decrease in its amount of capital

Question 3

The table below contains costs incurred by Fantabulous Enterprises, Inc., but some values are missing.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Variable costs</th>
<th>Total Costs</th>
<th>Marginal costs</th>
<th>Average total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>$100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>$279</td>
<td>$179</td>
<td>$279</td>
</tr>
<tr>
<td>2</td>
<td>$320</td>
<td>$420</td>
<td>$141</td>
<td>$210</td>
</tr>
<tr>
<td>3</td>
<td>$447</td>
<td>$547</td>
<td>$127</td>
<td>$182</td>
</tr>
<tr>
<td>4</td>
<td>$592</td>
<td></td>
<td>$137</td>
<td>$173</td>
</tr>
<tr>
<td>5</td>
<td>$755</td>
<td>$855</td>
<td></td>
<td>$171</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>$1084</td>
<td>$229</td>
<td>$180</td>
</tr>
<tr>
<td>7</td>
<td>$1295</td>
<td>$1395</td>
<td>$311</td>
<td>$200</td>
</tr>
</tbody>
</table>

What is the total cost of producing 4 units?

A. $592.00  
B. $540.00  
C. $43.25   
D. $229.00  
E. $692.00

Question 4

Which of the following statements is true about the relationship between marginal cost (MC) and average total cost (ATC)?

A. If MC is less than ATC, then ATC is decreasing.  
B. If MC is greater than ATC, then ATC is decreasing.  
C. If MC is less than ATC, then ATC is minimized.  
D. If MC is greater than ATC, then average variable cost and ATC are moving farther apart  
E. If MC equals ATC, then ATC is at its maximum
Question 5

Tuma Unlimited produces noodles in a perfectly competitive market. Its average total costs, marginal costs, and average variable costs have all decreased, but its average fixed costs haven't changed.

Which of the following would cause these changes?

A. a subsidy on fixed costs
B. an increase in fixed costs
C. a tax on variable costs
D. an improvement in productivity
E. a tax on fixed costs

Question 6

A firm's long-run average total cost curve is shown in this figure:

Which quantity is this firm's minimum efficient scale (MES)?

A. Q2
B. Q5
C. Q4
D. Q3
E. Q1

Question 7
Dineo Enterprises is experiencing economies of scale.

Which of the following must be true?

A. Dineo Enterprises' economic profits will decrease if it increases output.
B. Long-run average total cost decreases if Dineo Enterprises increases output.
C. This firm’s long-run average total cost curve is flat.
D. Proportionate increases in inputs result in proportionate increases in outputs.
E. All of the firm's costs are implicit.

Question 8

Malinalli is a painter and coder who likes both professions equally. She can earn $80,000 as a painter or $70,000 per year as a coder, and has no other costs associated with either profession.

What is Malinalli’s economic profit if she chooses to be a coder instead of a painter?

A. $80,000
B. −$10,000
C. −$150,000
D. $0
E. $70,000

Question 9

What must be true if a firm is earning only a normal profit?

A. Economic profits are positive.
B. Accounting profits equal zero.
C. Accounting profits are negative.
D. Economic profits equal zero.
E. Economic profits are negative.

Question 10

Which of the following best describes a firm's profit maximization rule?

A. produce the quantity where marginal cost equals marginal revenue
B. produce the quantity where marginal revenue exceeds marginal cost by the greatest amount.
C. produce the quantity where price exceeds average variable cost by the greatest amount.
D. Produce the quantity where average variable cost equals average total cost
E. produce the quantity where price is equal to the average total cost
Question 11
Which of the following best describes what happens in the long run when a firm anticipates that the price of their good will always be less than average total cost (ATC)?

A. The firm will exit the industry.
B. The firm will enter the industry
C. The firm will shut down.
D. The firm will produce as long as price is less than average variable cost.
E. The firm will produce as long as price is greater than average variable cost.

Question 12
All of the following are characteristics of perfectly competitive markets EXCEPT

A. many sellers
B. identical goods
C. many buyers
D. perfect information
E. barriers to entry

Question 13
How is the price in a perfectly competitive market determined?

A. by the strategic interaction of firms
B. by mutual agreement of firms
C. by each firm
D. by the market
E. by the government

Question 14
The market for happy face stickers is perfectly competitive, and the market price for these stickers is greater than the average total cost (ATC) of a typical firm.

Which of the following is true about this market?

A. Firms are earning positive economic profits and more firms will enter this industry.
B. Firms are producing a cost-efficient quantity
C. Firms are earning zero economic profits and the market is in long-run equilibrium
D. Firms are producing an allocatively inefficient quantity and firms will exit this industry.
E. Firms are charging prices higher than the marginal cost of producing stickers.
Question 15

If a firm in a perfectly competitive market chooses its profit-maximizing quantity, which of the following MUST be true?

A. \( MR > MC \)
B. \( P = MC \)
C. \( MR < P \)
D. \( MC > ATC \)
E. \( P > ATC \)

Question 16

Cheesy crackers are sold in a perfectly competitive market. An increase in the demand for cheesy crackers increased price in the short run, but prices decreased in the long run.

Which of the following can be concluded based on the information given?

A. This is a constant cost industry.
B. The producers of this good were operating below minimum efficient scale.
C. An increase in production had no effect on input prices.
D. As more firms entered this market, input prices increased.
E. The firms in this market competed on the basis of price.

Question 17

Rubber eel toys are produced in a perfectly competitive market. The long-run supply curve for these toys is perfectly elastic.

Based on this information, which of the following is true for this industry?

A. The marginal cost curve for a firm in this industry decreases as more firms enter.
B. When more firms enter this market, each firm’s average total cost curve increases.
C. When more firms enter this market, input prices don’t change.
D. An increase in demand in this market increases prices in the long-run.
E. When more firms enter this market, input prices increase.

Question 18

The coffee industry is perfectly competitive. All firms in the coffee industry are producing an allocatively efficient quantity and are productively efficient.
Which of the following is most likely true based on this information?

A. The market supply will shift right
B. Firms will decrease their average total costs if they increase output
C. The market is in long-run equilibrium.
D. Firms are making economic losses and more firms will exit this industry.
E. Firms are earning economic profits and more firms will enter this industry.

Question 19

If a firm operates in a perfectly competitive market, what must be true about the firm's efficiency in the short run and the long run?

A. Productively efficient in the short run; allocatively efficient but not productively efficient in the long run
B. Allocatively efficient and productively efficient in the short run; neither allocatively efficient nor productively efficient in the long run
C. Allocatively efficient in the short run; both allocatively efficient and productively efficient in the long run
D. Neither allocatively efficient nor productively efficient in the short run; neither allocatively efficient nor productively efficient in the long run
E. Neither allocatively efficient nor productively efficient in the short run; Both allocatively efficient and productively efficient in the long run

Answer Key

1. B
2. C
3. E
4. A
5. D
6. D
7. B
8. B
9. D
10. A
11. A
12. E
13. D
14. A
15. B
16. B
17. C
18. C
19. C