

## Econ 321 Test 02 Fall 2004

### True/False

Indicate whether the sentence or statement is true or false.

- \_\_\_ 1. Either a rise in marginal cost or a fall in marginal revenue could cause a firm to reduce its output in the short run.
- \_\_\_ 2. A standard assumption used in economic theory is that all factors of production are variable in the long-run.
- \_\_\_ 3. If marginal cost rises when output is increased, then the average cost of production is also rising.
- \_\_\_ 4. For a competitive firm, marginal revenue is constant and equal to the market price.
- \_\_\_ 5. A firm earns a positive economic profit when the market price exceeds its marginal cost.
- \_\_\_ 6. A competitive firm will exit an industry in the long run if the market price falls below the firm's break-even price.

### Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- \_\_\_ 7. Economists generally assume that the firm's goal is to
  - a. minimize its costs.
  - b. maximize its profit.
  - c. make its market share as large as possible.
  - d. maximize its production.
- \_\_\_ 8. If a firm's marginal cost exceeds its marginal revenue, then
  - a. the firm's profit is negative (i.e., the firm is suffering losses).
  - b. the firm should shut down its operations.
  - c. cutting back production will increase the firm's profit.
  - d. the firm should reduce its per-unit cost by increasing its output.

### Demand and Total Cost of Production

The following questions refer to the following tables which show the demand for a firm's product and the firm's total cost of production.

Demand		Total Cost	
Quantity	Price	Quantity	Dollars
0 units	\$35 per unit	0 units	\$ 0
1	30	1	4
2	25	2	11
3	20	3	21
4	15	4	34
5	10	5	50

- \_\_\_ 9. Refer to Demand and Total Cost of Production. The marginal cost of producing the third unit is
  - a. \$21 per unit.
  - b. \$20 per unit.
  - c. \$10 per unit.
  - d. \$7 per unit.

- \_\_\_\_\_ 10. Refer to Demand and Total Cost of Production. The marginal revenue received from selling the fifth unit is
- \$50 per unit.
  - \$10 per unit.
  - \$2 per unit.
  - \$10 per unit.
- \_\_\_\_\_ 11. Refer to Demand and Total Cost of Production. According to the equimarginal principle, how many units should the firm produce in order to maximize its profit?
- 2 units.
  - 3 units.
  - 4 units.
  - 5 units.

### Marginal Cost of Production

The following questions refer to the following table which shows a firm's marginal cost of production.

Quantity (number of units)	1	2	3	4	5	6	7	8
Marginal Cost (dollars per unit)	3	4	6	9	13	18	24	31

- \_\_\_\_\_ 12. Refer to Marginal Cost of Production. Suppose demand for the firm's product is horizontal at a price of \$18 per unit. How much output should the firm produce in order to maximize its profit?
- 3 units.
  - 4 units.
  - 6 units.
  - 7 units.
- \_\_\_\_\_ 13. What do economists mean by the phrase "sunk costs are sunk"?
- Sunk costs are irretrievable, but they do lower profits and thus affect the firm's output level.
  - Sunk costs are a primary reason why marginal costs tend to increase.
  - Sunk costs cannot be recovered and are irrelevant to future decision making.
  - Sunk costs lower consumer welfare, because producers "pass on" these costs in the form of higher prices.
- \_\_\_\_\_ 14. Which of the following situations characterizes the short run?
- The firm's output level is held constant.
  - Only fixed factors of production are available to the firm.
  - All factors of production are variable.
  - Some inputs are fixed, and some inputs are variable.
- \_\_\_\_\_ 15. The shapes of the total product and marginal product curves are related because
- an increase in total product pulls marginal product up.
  - marginal product gives the slope of total product.
  - marginal product increases as total product increases.
  - the marginal product curve lies above the total product curve.

### Variable Cost of Production

The following questions refer to the following table which shows a firm's variable costs of production.

Quantity (number of units)	0	1	2	3	4	5	6	7	8
Variable Cost (dollars)	0	30	50	60	80	110	160	250	400

- \_\_\_\_\_ 16. Refer to Variable Cost of Production. The marginal cost of the fifth unit of output is
- \$22 per unit.
  - \$30 per unit.
  - \$46 per unit.
  - \$50 per unit.
- \_\_\_\_\_ 17. Refer to Variable Cost of Production. If the total cost of producing five units of output is \$150, fixed costs must be
- \$8.
  - \$22.
  - \$30.
  - \$40.
- \_\_\_\_\_ 18. If the average cost curve is downward sloping, then
- marginal cost is smaller than average cost.
  - the marginal cost curve is also downward sloping.
  - there are increasing marginal returns to labor.
  - wages and other input prices are falling.
- \_\_\_\_\_ 19. The marginal cost curve crosses
- only the average variable cost curve at its bottom.
  - both the average cost curve and the average variable cost curve at their bottoms.
  - only the average cost curve at its bottom.
  - the marginal product curve at its maximum.
- \_\_\_\_\_ 20. All points on the firm's expansion path
- give the firm the maximum possible profit.
  - minimize the firm's cost of producing some level of output.
  - have the same long-run average cost.
  - make the marginal product of labor equal to the marginal product of capital.
- \_\_\_\_\_ 21. Suppose a firm doubles its employment of all inputs in the long run. If this action more than doubles the amount of output produced, then this firm is experiencing
- increasing returns to scale.
  - diminishing marginal returns.
  - technological progress.
  - positive marginal revenue.
- \_\_\_\_\_ 22. How are a firm's short-run and long-run average cost curves related?
- SRAC is greater than LRAC, which forces the LRAC curve to be upward sloping.
  - SRAC and LRAC slope up or down together, but SRAC is always the steeper of the two curves.
  - The SRAC curve is tangent to and lies above the LRAC curve.
  - The LRAC curve just touches the SRAC curve at its minimum point.
- \_\_\_\_\_ 23. A competitive firm will shut down its operations in the short run when the market price falls below its
- marginal revenue.
  - marginal cost.
  - average cost.
  - average variable cost.
- \_\_\_\_\_ 24. A competitive firm will exit an industry in the long run when the market price falls below its
- marginal revenue.
  - marginal cost.
  - average cost.
  - average variable cost.

- \_\_\_\_\_ 25. Assume dental care is provided by a competitive industry. A new government regulation requires each dentist to have a newly-developed ultrasound machine for sterilizing dental instruments. What happens to the price of dental care?
- a. The price of dental care rises in the short run and rises further in the long run.
  - b. The regulation will cause higher prices in the short run, but it will have no long-run impact.
  - c. There is no change in the short run, but dentists will exit and prices will rise in the long run.
  - d. The machine is a sunk cost, so the price of dental care does not change in either the short run or the long run.

**Analytical Questions** Economics 321 Test 02

1. (10 points) Suppose that a firm is operating at a point off its expansion path. At the point where the firm is operating:

$$MRTS_{LK} = \frac{\Delta K}{\Delta L} > \frac{P_L}{P_K}$$

Explain how this firm could increase its output without changing its total expenditure on inputs (assume that both capital and labor may be varied).

2. (15 points) Suppose that shoes are produced in a competitive constant cost industry. Initially the market is in long-run equilibrium, but then there is a permanent decrease in the demand for shoes. Use diagrams to show what happens in the market and for a typical firm producing shoes in the short-run and in the long run.

In the short-run what happens to

the price of shoes?

the quantity of shoes produced in the market as a whole?

the quantity of shoes produced by a typical firm?

the number of firms in the market?

In the long run, what happens to the

the price of shoes?

the quantity of shoes produced in the market as a whole?

the quantity of shoes produced by a typical firm?

the number of firms in the market?

Continue your answer for question 2 here.

**Econ 321 Test 02 Fall 2004**  
**Answer Section**

**TRUE/FALSE**

1. T
2. T
3. F
4. T
5. F
6. T

**MULTIPLE CHOICE**

7. B
8. C
9. C
10. D
11. B
12. C
13. C
14. D
15. B
16. B
17. D
18. A
19. B
20. B
21. A
22. C
23. D
24. C
25. C