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Economics 201

Midterm #2: Practice Midterm

1) When marginal cost (MC) is less than average cost (AC), then:
a. AC is increasing
b. MC is increasing
c. AC is decreasing
d. MC is constant

2) As MC begins increasing, we expect which of the following to occur:
a. the marginal product of labor will be decreasing
b. the marginal product of labor will be increasing
c. the marginal product of labor will be at a maximum
d. the marginal product of labor will be constant

3) If the market price falls below the breakeven point, then:
a. the firm will exit in the short run
b. the firm will earn a loss in the short run
c. the firm will raise the price in the short run
d. the firm will earn positive profits in the short run
e. the firm will change the quality of their product in the short run

4) The best definition of bounded rationality is:
a. when it is rational to increase output until reaching a certain point
b. when a person makes rational economic decisions on the basis of limited information
c. when a person makes rational economic decisions in order to increase profits
d. when it is rational to erect boundaries in order to become more efficient

5) If a firm increases its scale of operation, and the long run costs are decreasing, then:
a. diseconomies of scale are present
b. economies of scale are present
c. there are decreasing returns to scale
d. the firm is producing at maximum output

6) Which of the following imply that a firm is earning zero economic profit:
a. firms are producing at a point where AC is at a minimum
b. firms are producing where P = MC
c. firms are producing where AVC = MC
d. all of the above

The following production function (below) represents the output of an individual firm. This equation should be used to answer Questions #7-9 (Q = total product or output, L = labor).

$$Q = 2\sqrt{10L}$$

7) Calculate the average product of labor (APL) when L = 40
a. 40
b. 0.5
c. 1.0
d. 400
e. none of the above

8) Calculate the marginal product of labor (MPL) when L increases from 40 to 41 (and round your answer to the nearest tenth):
a. 0.1
b. 40.5
c. 2.0
d. 0.5

9) If MPL = 1.0 when L = 10, then what must be true about APL:
a. APL is increasing
b. APL is equal to MPL
c. APL is decreasing
d. APL is at a maximum

10) Which of the following occurs when a firm produces the maximum possible output:
a. the firm's APL is equal to zero
b. the firm's APL is negative
c. the firm's MPL is equal to zero
d. the firm's MPL is negative
e. the firm's average cost is equal to zero

Questions 11-13 all relate to the following equations:

$TC = 80$	[if $q = 0$]
$TC = 100 + 20q^2$	[if $q > 0$]
$MC = 40q$	[if $q > 0$]

(where TC = total costs, MC = marginal cost, and q = output)

11) What is the value of average cost (AC), when q = 10?
a. 2100
b. 80
c. 210
d. 400
e. none of the above

12) What is the value of average fixed cost (AFC), when q = 10?
a. 8
b. 50
c. 100
d. 110
e. none of the above

13) What is the value of average variable cost (AVC), when q = 10?
a. 8
b. 40
c. 200
d. 2000
e. none of the above

14) As a firm expands, if the firm needs less than twice the factors to produce double the output:
a. then the firm is experiencing increasing returns to scale
b. then the firm is experiencing increasing long run average cost
c. then the firm is experiencing decreasing returns to scale
d. then the firm is experiencing constant long run average cost

Questions 15-17 relate to the following equations and correspond with the costs of a profit maximizing, perfectly competitive firm.

$$TC = \$25 \qquad [\text{if } q = 0]$$
$$TC = 100 + 2q + q^2 \qquad [\text{if } q > 0]$$
$$MC = 2 + 2q \qquad [\text{if } q > 0]$$

15) If the market price is $28, what are each firm's profits?
a. $0
b. $69
c. $339
d. -$3471
e. none of the above

16) What are the sunk costs of this firm?
a. $0
b. $2
c. $25
d. $100
e. none of the above

17) What are the recoverable fixed costs of this firm?
a. $0
b. $2
c. $25
d. $100
e. none of the above

18) Which of the following will allow a perfectly competitive firm to maximize its profits:
a. set their own (firm) price at the point where it is equal to marginal cost
b. produce where the firm's marginal cost is equal to their own average cost
c. set their own (firm) price at the point where it is equal to average cost
d. produce where the market price is equal to marginal cost

19) Which of the following is true about perfectly competitive firms in the long run:
a. firms only have variable costs in the long run, no fixed costs
b. firms can earn profits that are greater than zero
c. firms will shut down if prices fall below average cost
d. all of the above

20) Which is the best example of diminishing marginal returns:
a. as a firm's output increases, the firm's marginal cost will decrease
b. as a firm hires more labor, the firm's will get increasingly smaller changes in output
c. as a firm hires more labor, the firm's output will decrease
d. as a firm's output increases, the firm will hire fewer units of labor

21) Which of the following statements is true if we assume that a firm faces diminishing marginal returns when hiring labor:
a. the firm's MC will reach a minimum point when the firm produces where MC = AC
b. the firm's marginal product reaches a minimum point before intersecting with average product
c. the firm will not produce if their marginal product is decreasing
d. the firm will produce at a point where their MC is increasing

22) Which of the following is a situation that a profit maximizing perfectly competitive firm would face in the long run:
a. P > AC
b. P > MC
c. P = AC
d. P < AC

23) Which of the following is **not** a characteristic of a perfectly competitive market:
a. each firm produces only a small amount of overall market output
b. no firm can affect the market price by changing their output
c. perfect availability of information
d. firms produce heterogeneous goods
e. the market has no barriers to entry or exit

24) When P > AC in a perfectly competitive market and demand is expected to remain unchanged, then which of the following is most likely to occur over the long run:
a. firms will contract in order to lower the price
b. firms will exit the market and the market supply curve will shift right
c. firms will enter the market and the market supply curve will shift left
d. there will be no changes over the long run until price rise
e. firms will enter the market and the market supply curve will shift right