Econ 101, Sections 3 and 4, S11, Schroeter
Exam #4, Special code = 0002

Choose the single best answer for each question. Do all of your scratch-work in the side and bottom margins of pages.

1. Gordon is the owner of a small website design company. He devotes a lot of time to the enterprise; time that he could spend working in someone else's web design company at an annual salary of $65,000 per year. For his firm, Gordon's foregone salary of $65,000 per year represents
a. revenue.
b. profit.
c. an explicit cost.
*. an implicit cost.

2. For the year 2010, the Reliable Ratchet Company had revenue of $450,000, accounting profit of $140,000, and economic profit of $60,000. For 2010, Reliable Ratchet's explicit costs were _____, and its implicit costs were _____.
a. $250,000; $200,000.
*. $310,000; $80,000.
c. $390,000; impossible to determine without more information.
d. impossible to determine without more information; $200,000.

3. For a particular firm, average total cost is $30/unit when the firm produces 5 units of output per day. The marginal cost of the 6^{th} unit of output per day is $60. What is the firm's average total cost at an output of 6 units per day?
*. $35/unit.
b. $30/unit.
c. $25/unit.
d. $10/unit.

4. A firm's marginal product of labor is defined as the additional _____ that results from a one unit increase in _____, holding other inputs fixed.
a. profit; labor.
b. cost; labor.
c. number of workers; output.
*. output; labor.

5. A firm uses labor (a variable input) in combination with fixed inputs to produce output. When 10 workers are employed, output is 250 units/day. When 11 workers are employed, output is 285 units/day. If this firm's marginal product of labor is positive but diminishing, we can conclude that output with 12 workers would be
a. greater than 320 units/day.
*. between 285 and 320 units/day.
c. between 250 and 285 units/day.
d. Not enough information given for an answer.

Questions 6, 7, and 8 refer to the following information. The Alpha company uses a factory of fixed size in combination with a single variable factor, labor, to produce output. Alpha's fixed costs are $600/day. It hires labor at a wage of $120/worker/day. The following table describes Alpha's short-run production function. In other words, it reports the number of units of output that Alpha would produce in its factory for various labor employment levels.

Labor (workers)	Output (units/day)
0	0
1	24
2	46
3	64
4	78
5	87
6	91

6. When Alpha employs 5 workers, its average fixed cost is
a. $120.00/unit.
b. $13.79/unit.
*. $6.90/unit.
d. $1.38/unit.

7. When Alpha employs 4 workers, its average total cost is
a. $30.00/unit
*. $13.85/unit.
c. $7.69/unit.
d. $1.54/unit.

8. Over the output range from 46 to 64 units/day, Alpha's marginal cost is approximately
a. $120.00/unit.
b. $22.17/unit.
c. $14.78/unit.
*. $6.67/unit.

9. Which of the following statements best reflects the situation of a price-taking firm in a competitive industry?
a. The firm will want to set its price above marginal cost in order to maximize profit.
*. If the firm were to try to charge more than the going price, it would sell no output.
c. The firm has an incentive to charge less that the market price in order to attract more customers.
d. The firm can sell only a limited amount of output at the market price before the price will fall.

10. A competitive firm faces a price of $6.00/unit for its output. At its current output level, marginal cost is $4.00/unit and average total cost is $5.00/unit. To maximize profit (or minimize loss) in the short-run, the firm should
*. increase output.
b. decrease output but not shut down.
c. shut down.
d. not enough information given for an answer.

11. A competitive firm that has increasing marginal cost and faces a price of $20 for its product has been maximizing its profit which is positive. Then the price of its product increases to $25 and the firm makes whatever short-run adjustments are necessary to maximize its profit at the now-higher price. After the firm has made these adjustments,
a. its output is higher than before.
b. its average total cost is higher than before.
c. its marginal cost is higher than before.
*. all of the above.

12. In the short-run, there are 100 identical firms in a perfectly competitive industry. Each firm would have a marginal cost of $10.00/unit and an average total cost of $8.00/unit if it were to produce 50 units/week. At a price of $10.00/unit, the quantity demanded of the industry's product is 5,500 units per week. The short-run equilibrium price in this industry will be
*. greater than $10.00/unit.
b. $10.00/unit.
c. between $8.00/unit and $10.00/unit.
d. $8.00/unit.

13. A competitive industry is in long-run, zero-profit equilibrium to start. Then changes in government regulations lead to a decrease in fixed costs for the firms in the industry. (For example, the regulatory changes might relax a requirement that firms employ full-time safety monitors in their factories.) As a result,
a. the demand for the industry's products would increase.
b. some existing firms would exit the industry in the long-run.
c. the firms in the industry would make positive profit in both the short-run and the long-run.
*. competition would lead to a decrease in the price of the industry's product in the long-run.

14. The exit of existing firms from a competitive market will
*. decrease market supply and increase price.
b. decrease market supply and decrease price.
c. increase market supply and increase price.
d. increase market supply and decrease price.

15. A competitive industry is in long-run, zero-profit equilibrium to start. Then the demand for the industry's product increases. When a new long-run, zero-profit equilibrium is restored, there will be
a. the same number of firms in the industry as before.
*. more firms in the industry than before.
c. fewer firms in the industry than before.
d. impossible to determine without more information.

16. When a single firm can supply a product to the entire market at a lower per-unit cost than could two or more firms, the industry is called
a. a fixed-cost monopoly.
b. a resource monopoly.
c. an exclusive monopoly.
*. a natural monopoly.

17. In the 1970s, David Nicholas, an Iowa State graduate research assistant, made a discovery for which the university was granted a patent. This discovery was
a. a livestock feed providing enhanced animal nutrition at low cost.
*. a process for converting printed text into digital code.
c. a light-weight metal alloy with superior strength properties.
d. a new computer language well-suited for business applications.

18. A monopolist can sell 20 widgets/day when it charges a price of $5.00/widget. In order to sell 21 widgets/day, the monopolist must reduce its price to $4.94/widget. The monopolist's marginal revenue of the 21st widget/day is
a. $4.97/widget.
*. $3.74/widget.
c. -$1.20/widget.
d. -$0.06/widget.

19. A monopolist is currently producing and selling 75 units/day at a price of $10 per unit. It's marginal revenue is $5/unit, its marginal cost is $6/unit, and its average total cost is $5/unit. What can we conclude about this monopolist?
a. It is currently maximizing profit, and its profit is $375/day.
b. It is currently maximizing profit, and its profit is $300/day.
c. In order to maximize profit, it should produce more output and charge a lower price.
*. In order to maximize profit, it should produce less output and charge a higher price.

20. At its current output level, a monopolist's marginal cost and average total cost are $6.00/unit and $4.00/unit, respectively. Its price and marginal revenue are $6.00/unit and $3.00/unit respectively. To maximize profit or (minimize loss) in the short run, the monopolist should
a. maintain its current output level.
b. increase output.
*. decrease output, but not shut down.
d. shut down.

21. The following table gives information on the price, quantity demanded, and total cost of producing each quantity for a monopolist. How much profit will the firm earn at the profit-maximizing price?

Price	Quantity demanded	Total cost
$5	0	$3
$4	5	$8
$3	10	$15
$2	15	$24
$1	20	$35
$0	25	$48

a. $18
*. $15
c. $12
d. $9

Questions 22 and 23 refer to the following information. A monopolist faces two groups of potential customers. There are 300 potential customers with willingness-to-pay (WTP) of $2 for the first unit and $0 for additional units. There are also 100 potential customers with WTP of $3 for the first unit and $0 for additional units. The monopolist produces the product at zero fixed cost and a constant marginal cost of $1.50/unit.

22. If the monopolist is required to charge a uniform price, it would charge a price of
a. $3 and make a profit of $600.
*. $2 and make a profit of $200.
c. $1.50 and make a profit of $200.
d. None of the above.

23. If the monopolist is allowed to price discriminate, the maximum profit it could earn is
a. $350.
*. $300.
c. $200.
d. $150.

24. For a uniform-price monopoly facing a downward sloping demand curve, the profit-maximizing level of output will be _____ the socially efficient level of output.
a. greater than.
b. equal to
*. less than.
d. impossible to determine without more information. (It depends on whether the monopolist's marginal cost curve is horizontal or upward sloping.)

25. In the language of game theory, a situation in which each person must consider how others might respond to his or her own actions is called a
a. Nash situation.
b. cooperative situation.
*. strategic situation.
d. collusive situation.

Questions 26 and 27 refer to the following information. There are two firms, firm 1 and firm 2, producing widgets, a homogeneous product. Market demand is given by the formula: $P = 5 - 0.1Q$, where Q is market quantity in widgets/day and P is the price in \$/widget. Each firm has zero fixed cost and marginal cost that is constant at \$2/widget.

26. If each firm produces 10 widgets/day, *the combined profit of both firms* will be
a. \$40/day.
b. \$30/day.
*. \$20/day.
d. \$10/day.

27. If firm 1 produces 12 widgets/day and firm 2 produces 10 widgets/day, the profits of firm 1 (π_1) and firm 2 (π_2) will be:
a. $\pi_1 =$ \$11.00/day, $\pi_2 =$ \$9.00/day.
b. $\pi_1 =$ \$10.40/day, $\pi_2 =$ \$8.00/day.
c. $\pi_1 =$ \$8.80/day, $\pi_2 =$ \$8.80/day.
*. $\pi_1 =$ \$9.60/day, $\pi_2 =$ \$8.00/day.

28. The prisoners' dilemma game
a. is a game in which there is no Nash equilibrium.
b. provides insight into why cooperation is individually rational.
*. provides insight into why cooperation is often difficult.
d. is a game in which neither player has a dominant strategy.

Questions 29 and 30 refer to the following payoff matrix describing a game between two players A and B. Player A chooses among strategies "Up,", "Middle," and "Down." Player B chooses among strategies "Left," "Center," and "Right." The entries in the cells of the table give the payoffs, in dollars, to each player for each combination of strategies. (More dollars are better than fewer. In each cell, Player A's payoff is listed first and Player B's payoff is listed second.)

		Player B's strategies		
		Left	Center	Right
Player A's strategies	Up	(2, 1)	(6, -4)	(-2, 3)
	Middle	(5, 4)	(3, 0)	(12, 3)
	Down	(-3, 6)	(0, 10)	(8, 4)

29. Which of the following is true?
a. Both players have dominant strategies.
b. Only Player A has a dominant strategy.
c. Only Player B has a dominant strategy.
*. Neither player has a dominant strategy.

30. Which of the following is true?
a. (Middle-Right) is a Nash equilibrium.
*. (Middle-Left) is a Nash equilibrium.
c. (Up-Left) is a Nash equilibrium.
d. This game has no Nash equilibria.