ECON 102 - Principles of Microeconomics
Professor Elliott Parker
Second Exam
April 3, 2006

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N A M E

Part I (60%) - Multiple Choice: on a scantron mark the single best answer, two points each.

1. Suppose the marginal cost curve in the short run first decreases, then reaches a minimum, and then increases. If we are at an output where marginal cost is decreasing, then:
   A) marginal product must be increasing.
   B) average variable cost must be decreasing.
   C) average total cost must be increasing.
   D) both A and B are correct.

2. The term "diminishing returns" refers to:
   A) a decrease in the extra output due to the use of an additional unit of a variable input, when more and more of the variable input is used and all other things are held constant.
   B) a decrease in total output due to overcrowding, when too much labor is used with too little land or capital.
   C) a falling interest rate that can be expected as one's investment in a single asset increases.
   D) a reduction in profits caused by increasing output beyond the optimal point.

3. Krista operates a dry-cleaning business in Tampa that incurs $900 per month in fixed costs. Last month her total output equaled 3,000 pounds of clothes. This month her total output fell to 2,700 pounds. This means her average fixed cost _____ by a little more than _____.
   A) increased; 2.50 cents
   B) fell: 2.50 cents
   C) fell; 3.33 cents
   D) fell; $3
   E) increased; 3.33 cents

4. The long run refers to the period of time for which:
   A) all inputs are variable.
   B) marginal costs are decreasing.
   C) a fixed input exists.
   D) none of the above

5. The long-run average cost curve will be upward sloping when the firm is experiencing:
   A) diminishing returns.
   B) economies of scale.
   C) decreasing returns to scale.
   D) constant returns to scale.

6. If a local fruit stand operates in a perfectly competitive market, that stand owner will be a price:
   A) discriminator.
   B) maker.
   C) maximizer.
   D) taker.

7. Consider a perfectly competitive firm in the short run. Assume the firm is producing the profit-maximizing output and assume that it is earning economic profits. At the profit-maximizing output, all of the following are correct *except*:
   A) price is equal to average total cost.
   B) price is equal to marginal cost.
   C) marginal cost is greater than average total cost.
   D) price is equal to marginal revenue.

8. Which of the following is *not* a characteristic of a perfectly competitive industry?
   A) Products are differentiated or heterogeneous.
   B) There are many firms.
   C) Firms seek to maximize profits.
   D) Profits may be positive in the short run.
   E) Average costs are minimized in the long run.

9. If firms are making positive economic profits in the short run, then in the long run:
   A) firms will enter the industry.
   B) industry output will rise and price will fall
   C) the short-run industry supply curve will shift rightwards.
   D) all of the above will occur.

10. A perfectly competitive firm operating in the short run producing 100 units of output has *ATC* = \$6 and *AFC* = \$2. The market price is \$5 and is less than *MC*. In order to maximize profits (or minimize losses), this firm should:
   A) shut down.
   B) do nothing; the firm is already maximizing profits.
   C) reduce output, but continue to produce a positive amount of output.
   D) increase output.

11. In perfect competition, the assumption of easy entry and exit implies that:
   A) in the long run all firms in the industry will earn zero economic profits.
   B) in the short run all firms in the industry will earn positive economic profits.
   C) in the short run all firms in the industry will earn zero economic profits.
   D) A and B are correct.

12. Xavier utility depends upon his grades, and he notices that the marginal utility of working with a tutor seems to fall with each hour the tutor helps him study. If Xavier keeps the tutor until his grade actually begins to fall, his marginal utility will be:
   A) positive, but rising more slowly.
   B) zero.
   C) immeasurable.
   D) negative.

13. Chuck spends all his income on two goods: tacos and milkshakes. His income is \$100, the price of tacos is \$10, and the price of milkshakes is \$2. Put tacos on the horizontal axis and put milkshakes on the vertical axis. The slope of Chuck's budget line is equal to:
   A) 50.
   B) 1/5.
   C) –1/5.
   D) –5.
   E) 10.

14. Suppose Ivy buys only two things, books and coffee, and receives the same satisfaction from the last book bought as she did from the last coffee bought. Books cost twice as much as coffee, and she has spent all her money. If she is trying to maximize her utility:
   A) Ivy is making the right choice.
   B) Ivy should buy more coffee and books.
   C) Ivy should buy more books and less coffee.
   D) Ivy should buy more coffee and less books.

15. Two points on an indifference curve that displays a diminishing marginal rate of substitution between apples and oranges are: (10 apples and 2 oranges), (8 apples and 4 oranges). Which of the following combinations of apples and oranges could possibly lie on this indifference curve?
   A) 6 apples and 7 oranges
   B) 8 apples and 3 oranges.
   C) 10 apples and 6 oranges
   D) 9 apples and 4 oranges

16. The demand curve for a normal good will always slope downward because:
    A) the substitution effect and the income effect reinforce each other, and the income effect always displays an inverse relation between price and quantity demanded.
    B) even though the substitution effect and the income effect move in opposite directions, the substitution effect dominates, and it always displays an inverse relation between price and quantity demanded.
    C) even though the substitution effect and the income effect move in opposite directions, the income effect dominates, and it always displays an inverse relation between price and quantity demanded.
    D) the substitution effect and the income effect reinforce each other, and the substitution effect always displays an inverse relation between price and quantity demanded.

17. For ordinary goods, indifference curves:
    A) are convex from the origin.
    B) never cross.
    C) slope downward.
    D) Are infinite in number
    E) are all of the above.

18. Mr. Black always consumes coffee and cream in fixed proportions—8 oz. of coffee to 1 oz. of cream. This implies that for Mr. Black:
    A) the indifference curves for coffee and cream are right angles.
    B) 8 oz. of coffee and 2 oz. of cream yields exactly the same utility as 8 oz. of coffee and 1 oz. of cream.
    C) coffee and cream are perfect complements.
    D) All of the above are true.

19. Suppose Frank buys only milk and cereal, both of which are normal goods, and he always maximizes his utility. Suppose Frank's boss decides to increase Frank's pay by $200 per month. What happens to Frank's marginal rate of substitution between milk and cereal?
    A) It increases.
    B) It stays constant.
    C) It decreases.
    D) It depends on the shape of his indifference curve.

20. Suppose good *X* is a normal good and the price of good *X* decreases. Then:
    A) the substitution effect will cause a decrease in the consumption of good *X*.
    B) the income effect will cause a decrease in the consumption of good *X*.
    C) the income effect will cause an increase in the consumption of good *X*.
    D) A and B will occur.

21. The demand for factors of production is called a “derived demand” because:
    A) it is not easy to determine and must be derived by a technical (and often complicated) process.
    B) it is derived from the demand for the outputs that are produced by the factors of production.
    C) it is derived on the basis of questions posed to residents during the census.
    D) it is derived from the available supply of factors such as land that can be overexploited.

22. Which of the following instances of wage disparity is an example of the existence of compensating differentials?
    A) A nuclear scientist gets paid more than a janitor working in the same building.
    B) Tiger Woods gets paid more than a college professor.
    C) On the average, white men get paid more than women of all ethnicities.
    D) A window washer working in a suburban residential subdivision gets paid less than one who is washing windows on the outside of a skyscraper.

23. An “efficiency wage” describes a wage rate that is:
    A) determined by collective bargaining between unions and management.
    B) above the equilibrium wage in order to provide workers with an incentive to be more productive.
    C) equal to the VMPL adjusted so as to make the structure of compensation more equitable.
    D) efficient because it is exactly equal to the wage rate implied by the marginal productivity theory.

24. One reason that wage discrimination based on gender or ethnicity could continue to exist is:
    A) employers find that gender or ethnicity are statistically correlated with unobservable skills, and workers in discriminated groups believe they won't be given a chance to get a skilled job.
    B) the existence of higher than equilibrium wages due to market interference or market failure.
    C) it is justified by the marginal productivity theory of income distribution.
    D) A and B
    E) A, B, and C

25. Andre Cummings, the production manager of Electric Designs, has asked his boss for a pay raise. His boss is concerned that if he increases Andre's salary, Andre might work less. In other words, Andre's boss is concerned that leisure is a normal good for Andre and that his:
    A) income and substitution effects might cancel out to zero.
    B) income and substitution effects might move in the same direction.
    C) income effect might be greater than his substitution effect.
    D) substitution effect might be greater than his income effect.

26. If the labor supply curve slopes backwards, then:
    A) leisure is a normal good, and the income effect is greater than the substitution effect.
    B) labor is a normal good, and the income effect is greater than the substitution effect.
    C) leisure is an inferior good, and the substitution effect is greater than the income effect.
    D) labor is an inferior good, and the substitution effect is greater than the income effect.

27. An economy is efficient in production if:
    A) there is no way to reallocate factors of production among producers to produce more of some goods without producing less of others.
    B) it has an efficient allocation of resources.
    C) there is no way to produce more of some goods without producing less of other goods.
    D) all of the above.

28. An economy is inefficient if:
    A) there is a way to make at least one person better off without making others worse off.
    B) there is no way to make one person better off without making others worse off.
    C) the distribution of income among individuals is unfair.
    D) the distribution of utility among individuals is unfair.

29. Markets fail when:
    A) actions have side effects on others that aren't properly taken into account by the market.
    B) some goods, by their nature, are unsuited for efficient management by markets.
    C) someone or something prevents mutually beneficial trades from occurring.
    D) all of the above.

30. Which of the following statements about fairness is correct?
    A) A situation is fair if all individuals have equal opportunities for advancement.
    B) What constitutes fairness is subjective; there isn't one agreed-upon definition of fairness.
    C) Any situation that is efficient is fair (since one cannot have fairness without efficiency).
    D) A fair distribution of income would be one in which every individual in the economy receives the same income.

Part II (40%) - Problems and Short Answers

1. (6%) Given the following production function for Dave's Painting Service, where L is the number of labor hours and Q is the quantity of closets painted per week, calculate the average product of labor (APL) and marginal product of labor (MPL). If the firm is competitive, what is the condition for choosing the profit-maximizing amount of labor? If the firm pays an hourly wage of $15, its price per closet painted is $100 each, and the firm must pay $1600 in other costs per week, what is the firm's maximum profit?

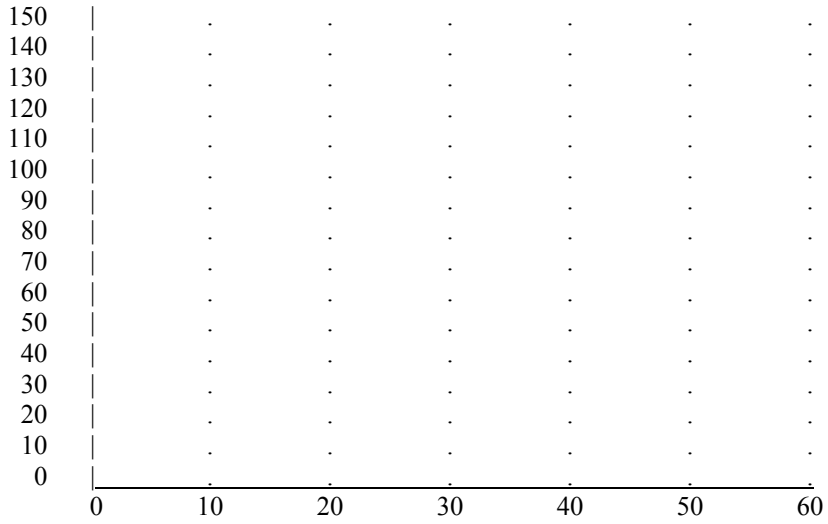
L	*Q*	*MPL*	*APL*
0	0		
40	10	_____	_____
80	24	_____	_____
120	36	_____	_____
160	44	_____	_____
200	50	_____	_____
240	54	_____	_____

2. (8%) Assume you have a fixed budget that you spend on only two goods, housing and groceries. Suppose that your income elasticity for housing is greater than one, while your income elasticity for groceries is approximately zero. Suppose that your rent now rises significantly. Using income and substitution effects, explain how this would affect the overall quantity of housing and groceries you prefer to consume. Show this on an indifference curve diagram, with housing on the horizontal axis.

3. (4%) Alpine Windows installs wood blinds, and charges $110 per installation. Its total cost (TC) varies with the number of installations, and is given in the table below. Using this information, calculate variable cost (VC), average total cost (AC), average variable cost (AVC), and marginal cost (MC):

Q	*TC*	*VC*	*AC*	*AVC*	*MC*
0	1200				
10	1700	_____	_____	_____	_____
20	2400	_____	_____	_____	_____
30	3300	_____	_____	_____	_____
40	4400	_____	_____	_____	_____
50	5700	_____	_____	_____	_____
60	7200	_____	_____	_____	_____

4. (4%) Graph below AC, AVC, and MC for Alpine Windows. Label the graph carefully, and show the profit-maximizing choice of output.



5. (3%) Assuming all fixed costs are sunk, at what price would Alpine Windows shut down in the short-run? At what prices would it be willing to operate at a loss in the short-run, but shut down in the long-run? When P = $110, what is its total profit? Assuming Alpine Windows is a typical firm in the market, is the market in long-run equilibrium? Why or why not?

6. (8%) Suppose there are a large number of identical firms, each producing tomatoes for a competitive market with significant fixed costs and upward-sloping average variable costs. Assuming the market is initially in long-run equilibrium, draw a diagram of the firm's unit costs and another diagram of market supply and demand. Now suppose that the local government imposes a fixed fee on all tomato growers, regardless of how many tomatoes they produce. On your diagrams, show how this fee would this affect the firm's average costs and marginal costs, and how it would affect the market in the short run and the long run. What would happen to the size of the typical firm?

7. (7%) Consider the plight of the unskilled American worker, when (1) more workers (e.g., women and immigrants) enter the workforce, and (2) foreign competition leads to lower prices for products produced with unskilled labor. Using a supply and demand diagram for the labor market, show how these two events affect the wage rate.

BONUS QUESTION: (10%) Students often find that the questions asked on an exam are not necessarily those they are best prepared to answer, so here is your chance. Write your own question here, and then answer it. Your grade depends on how well your question relates to the class material for this exam, and how well your answer demonstrates what you have learned.