Economics 101   PRINT NAME_____
Professor H. Quirmbach   STUDENT ID NO._____
Final Exam   GROUP TIME_____

                              SCORE_____

INSTRUCTIONS:

1. Fill in all requested information above and on the answer sheet.

2. There are 40 multiple choice questions and one problem. Enter the ONE best
answer for each multiple choice question on the answer sheet. There is no
penalty for guessing. On the answer sheet, completely darken the letter
representing your choice for each question. Do the problem on the test paper
itself.

1. Suppose that the price of bread is $1 per loaf and that the wage rate for bakers is $6 per hour. If a competitive bakery finds that the marginal product of its bakers' labor is 8 loaves per hour of labor, the bakery should
        a. fire some bakers.
        b. rent more ovens.
        c. hire some more bakers.
        d. reduce its output.
        e. shut down.

2. The point in a Production Possibility Frontier diagram at which an economy actually produces tells us something about how that economy answers
        a. the "What?" question.
        b. the "How?" question.
        c. the "For Whom?" question.
        d. Both a. and b.
        e. All of the above.

3. Suppose a monopolist faces a demand curve given by P(Q) = 20 - Q, where Q is total industry output and P is the market price. The monopolist's profit-maximizing output would be Q = 8 if its marginal costs were constant at
        a. 4.
        b. 8.
        c. 12.
        d. 16.
        e. 20.

4. Suppose a competitive industry faces a demand curve given by P(Q) = 20-Q, where Q is total industry output and P is the market price. The industry equilibrium output would be Q = 8 if firms' marginal costs were constant at
        a. 4.
        b. 8.
        c. 12.
        d. 16.
        e. 20.

5. A contestable industry is characterized by
        a. free entry.
        b. no sunk costs.
        c. zero profits in equilibrium.
        d. both a. and b.
        e. all of the above.

6. The "free rider problem"
        a. arises when public bus fares are set below cost.
        b. is associated with all goods produced by public agencies.
        c. refers to the fact that people benefit from a public good even when they do not have to pay for it.
        d. both a. and b.
        e. both b. and c.

7. Suppose that when the price of good x is $5, the last unit Joe rationally purchases has a marginal social benefit of $8. Which of the following must be true?
    a. Good x generates a negative externality of $3 per unit.
    b. In terms of his own utility, Joe should be buying more x.
    c. The firm producing good x is selling at a price below marginal cost.
    d. If Joe is acting rationally, then there is a positive externality being generated.
    e. The industry producing x is imperfectly competitive.

8. The "capture" theory of regulation suggests that
    a. price should be regulated to equal marginal cost, so that the maximum social welfare can be captured.
    b. firms which have sunk significant costs into an industry can have their profits captured by aggressive regulation, since they cannot move their assets to other industries.
    c. regulatory policy can be captured by consumer interests, which results in regulated firms making inadequate return on their investments.
    d. regulatory policy can be captured by the firms which are supposed to be regulated, with the result that regulatory policy may be set to the detriment of overall social welfare.
    e. both b. and c.

9. Firm Y faces a wage rate of $8/hr and a rental rate for machines of $4/hr. When firm Y chooses a cost-minimizing input combination, its marginal rate of technical substitution
    a. is 2.
    b. is 4.
    c. is 8.
    d. cannot be determined without knowing the firm's marginal products of labor and capital.
    e. cannot be determined without knowing the input levels the firm chooses.

10. Which of the following statements is likely to be true?
    a. Men's demand for Calvin Klein jeans is less elastic than their demand for pants in general.
    b. If today the price of gasoline permanently rises by $1/gal, my demand response will be less elastic six months from now than it will be this week.
    c. The demand for "pet rocks" is less elastic than the demand for housing.
    d. Statements a., b., and c. are all likely to be true.
    e. None of the above is likely to be true.

11. If x is a substitute for y, then the cross elasticity between the two is surely
    a. negative.
    b. greater than one.
    c. less that negative one.
    d. positive.
    e. zero.

12. The marginal "grody" of "zwarf" is found by
    a. taking the ratio of total grody to total zwarf.
    b. taking the ratio of change in grody to change in zwarf, for small changes is zwarf.
    c. taking the ratio of the percentage change in grody to the percentage change in zwarf.
    d. maximizing grody.
    e. zwarfing me out with a spoon.

13. Which of the following would tend to make an industry more collusive?
    a. A large number of firms being in the industry.
    b. Firms having heterogeneous costs.
    c. Price leadership.
   d. Orders being lumpy and infrequent.
    e. Both b. and c.

14. For the game whose payoffs are listed in the table, the most likely outcome is
    a. Mike goes high; George goes right.
    b. Mike goes high; George goes left.
    c. Mike goes low; George goes right.
    d. Mike goes low; George goes left.
    e. No one outcome is most likely.

	George Left	George Right
Mike High	Mike 15 / George 5	Mike 8 / George 6
Mike Low	Mike 10 / George 10	Mike 0 / George 12

15. If the government antitrust authorities broke up an industry price-fixing ring, which of the following would probably fall?
    a. output
    b. profits
    c. welfare
    d. consumer surplus
    e. All of the above would probably rise.

16. Which of the following statements is/are true?
    a. A minimum wage law harms employers and benefits all workers.
    b. To be effective, a "ceiling price" policy must set the ceiling price above the market equilibrium price.
    c. If a competitive industry produces pollution when it produces its product, a deadweight loss appears *above* the demand curve.
    d. Both a. and c.
    e. All of the above.

For a consumption good, Q:
In the figure at the right are graphed two
possible demand curves, DD and dd, and two
possible supply curves, SS and ss. Their various
intersection points are labeled A, B, C, and F.
Use this figure to answer the next 3 questions.
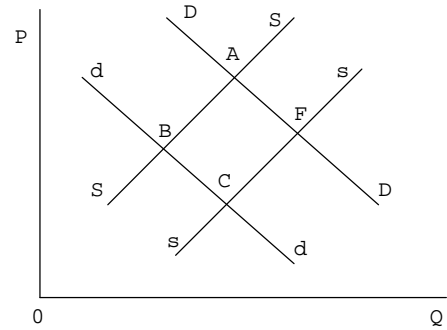
17. Which of the following shifts in equilibrium
points could represent the effect of an increase
in income (ceteris paribus) if the good is normal?
    a. A to B
    b. B to C
    c. C to F
    d. F to A
    e. F to B

18. Which of the following shifts in equilibrium points could represent the
effect of an increase in the wage rate (ceteris paribus)?
    a. A to B
    b. B to C
    c. C to F
    d. F to A
    e. B to F

19. Which of the following shifts in equilibrium points could represent the
effects of a cost-reducing technological innovation and an increase in income if
the good is inferior?
    a. A to C
    b. B to C
    c. C to A
    d. F to B
    e. B to F

20. In the short run, a competitive firm will surely shut down if
    a. P < SATC.
    b. P < LATC.
    c. P < SAFC.
    d. P < SMC.
    e. None of the above.

21. The "more is better" property implies that an indifference curve is
    a. upward sloping.
    b. U-shaped.
    c. backward-bending.
    d. downward sloping.
    e. This property has no specific implication about the shape of an IC.

22. Voluntary exchanges in a market are Pareto-improving
    a. only if the market is perfectly competitive.
    b. only if there are no positive externalities.
    c. only if the market price exceeds the seller's SATC.
    d. only if the buyers are richer than the sellers.
    e. if there are no negative externalities.

23. An increase in the price of garden tools causes Jane to cut back on her rose garden, much to the dismay of Jane's neighbors, who love to look at Jane's beautiful flowers. This situation contains an example of
    a. a positive externality.
    b. a backward-bending supply curve for roses.
    c. a negative supply elasticity for garden tools.
    d. a negative income elasticity in the demand for roses.
    e. a Rose Garden strategy.

24. Let's try this again: If the multiple choice section of this test is worth four times as much as the problem section, to allocate your time optimally on this test,
    a. you should spend four times as much time on the multiple choice part as on the problem part.
    b. you should allocate your time so that the last minute spent on the multiple choice part earns you four times as many points as the last minute spent on the problem part.
    c. you should allocate your time so that the last minute spent on the multiple choice part earns you the same number of points as the last minute spent on the problem part.
    d. All three of the above rules are equally optimal.
    e. Inadequate information is provided to determine the optimal time allocation.

25. Suppose that the long run average cost curve of each firm in industry X has an identical "U" shape. If there are no barriers to entering this competitive industry and input prices do not increase if new firms enter, then the long-run industry supply curve is
    a. upward sloping.
    b. U-shaped.
    c. backward-bending.
    d. vertical.
    e. horizontal.

26. Joe's demand for imported beer has an income elasticity of 3. If Joe's income increases from $100 to $130 per week, the most likely change in his demand for imported beer will be
    a. an increase of 10%.
    b. an increase of 30%.
    c. an increase of 90%.
    d. an increase of 115%
    e. an increase of 300%.

$/unit

27. In the graph at the right, AC represents a
firm's average cost curve. Which of the possible
marginal cost curves shown is most likely to be
this firm's true marginal cost curve?
    a. MC1
    b. MC2
    c. MC3
    d. MC1 and MC3 could both be the true MC
curve.
    e. MC2 and MC3 could both be the true MC
curve.
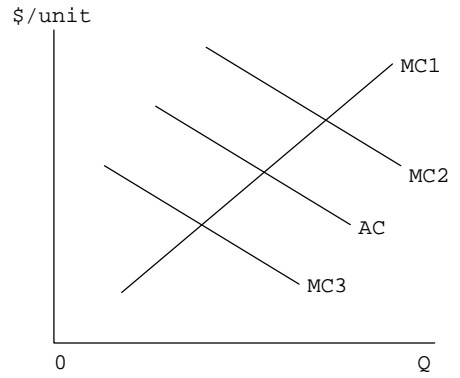
28. The engineering rule which states how much output can be produced from each
combination of inputs is
    a. an engineering standard.
    b. the total cost curve.
    c. a performance standard.
    d. the marginal cost curve.
    e. the production function.

29. Which of the following types of pollution control policies do NOT give firms
an incentive to find cheaper means of pollution control?
    a. engineering standards
    b. performance standards
    c. marketable permits
    d. pollution taxes
    e. All of the above reward a firm for finding cheaper means of pollution
control.

A monopolist faces the cost and demand
conditions graphed in the figure. Use this
information for the next two questions.

30. If the monopolist holds a patent, the
market price and output will be
    a. P1 and Q1.
    b. P2 and Q2.
    c. P3 and Q3.
    d. P4 and Q4.
    e. The monopolist will shut down,
since MC < AC.
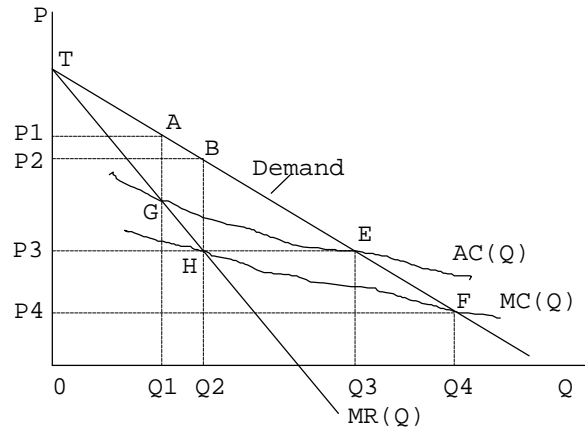
31. If the monopolist holds a patent, the
deadweight loss will be the area
    a. T-P1-A.
    b. T-P2-B
    c. T-P4-F.
    d. A-G-E.
    e. B-H-F.

32. Al's income goes up 5% at the same time the price of shoes goes up 3%. If Al's shoe demand has an income elasticity of +0.8, yet the quantity of shoes he demands is unchanged, then the own price elasticity of his demand must be
     a. -4/3.
     b. +3/5.
     c. -8/5.
     d. -3/8.
     e. -5/3.

33. When the price of good Z increases, the quantity of Z demanded decreases but total spending on Z increases. We can conclude from this that
     a. Z is a luxury good.
     b. Z is a Giffen good.
     c. there must be many close substitutes for Z.
     d. Z is elastically demanded.
     e. Z is inelastically demanded.

34. A consumer derives his income entirely from labor and gets utility from consuming goods and leisure. If this consumer's wage rate rises, his budget line
     a. rotates out about the leisure axis intercept.
     b. rotates in about the goods axis intercept, since leisure has gotten more expensive.
     c. makes a parallel outward shift, since the consumer's income has increased.
     d. rotates out about the goods axis intercept, since leisure is a luxury good and the consumer is now wealthier.
     e. rotates in about the leisure axis intercept, since the consumer will now work more and have less time to consume goods.

35. Dick's marginal utility of good x is 3, while his marginal utility of good y is 1. For Tom, MU for x is 1 and MU for y is 2. Which of the following would be a Pareto-improving trade?
     a. Dick gives Tom one unit of y and gets three units of x in return.
     b. Dick gives Tom one unit of x and gets two units of y in return.
     c. Dick gives Tom 3 units of x and gets one unit of y in return.
     d. Dick gives Tom one unit of y and gets one unit of x in return.
     e. Dick gives Tom one unit of x and gets one unit of y in return.

36. When the price of x rises, we can illustrate the "substitution effect" by
     a. rotating the budget line inward about the y-intercept.
     b. rotating the budget line inward about the x-intercept.
     c. sliding the budget line around the initial indifference curve.
     d. shifting the budget line parallel inward.
     e. rotating the budget line outward about the y-intercept.

37. The price of x is $5. At point G on Ann's budget line, her marginal utility of x is 10 and her marginal utility of y is 5. From G, Ann could increase her utility by moving along her budget line in the direction of buying more y. Which of the following would be consistent with these facts?
     a. The price of y is $2.
     b. The price of y is $3.
     a. The price of y is $6.
     a. The price of y is $11.
     a. The price of y is $28.

38. A competitive firm faces a price of $10 for its output. The firm's current output is 50 units. At that output level, average cost is $6 and is falling as output expands. The correct advice for the firm would be to
    a. expand output because price exceeds average cost.
    b. reduce output because price exceeds marginal cost.
    c. keep output the same because it is making a profit.
    d. expand output because price exceeds marginal cost.
    e. We can't give advice because we do not know the firm's marginal cost.

39. From now to the end of the year, a firm must pay a sunk cost of $50 per month. The highest profit output it can choose produces only $100 per month in revenue while costing $80 per month in avoidable costs. The firm should
    a. quit the business now because it is losing money.
    b. not shut down before the end of the year.
    c. shut down now temporarily but reopen after the end of the year.
    d. stay in business permanently, even after its sunk assets wear out.
    e. expand its output further to enlarge its market share.

40. A consumer's marginal rate of substitution is to (the absolute value of) the slope of her budget line as the ratio of a firm's marginal products is to
    a. the ratio of its input prices.
    b. its ratio of average to marginal cost.
    c. its ratio of total cost to output.
    d. its marginal rate of transformation.
    e. the slope of its marginal cost curve.

<u>PROBLEM</u>
    Do both parts of the following problem. Graph the indicated curves on the
grid on the last page. Show your scratch work on the back of this page.

<u>Part A:</u> A monopolist faces a demand curve given by P(Q) = 12 - Q, where P is
the price and Q is the total output.

    (i) Graph and label the demand and marginal revenue curves.

The monopolist, which operates many plants, has an overall marginal cost
curve given by MC(Q) = 2•Q. (That is, the marginal cost in dollars at any
output level Q is found by multiplying Q by $2.) Its average cost curve is
given by AC(Q) = 1•Q.

    (ii) Graph and label the marginal and average cost curves. Also label
the monopoly output as Q_M and the monopoly price as P_M.

    (iii) In equilibrium, the monopoly price is P_M = _____

                and the monopoly output is Q_M = _____

    (iv) At that output, average cost is $AC(Q_M)$ = _____

    (v) The monopoly profit is π = _____
(Hint: How would you find the total cost from the average cost?)
    (vi) The consumer surplus is   CS = _____

    (vii) Welfare is   W = _____

#Part B:# Now, as a result of an antitrust suit, the above monopolist is
broken into many small firms, with each new firm operating one of the old
monopolist's plants. Since the industry is still operating the same plants,
the marginal and average cost curves for the <u>industry</u> are the same as
before. (Assume that no new firms enter the industry beyond those created by
the break-up of the monopolist.)

    (i) The competitive equilibrium price will be P_C = _____
Label this price P_C in the figure.
    (ii) The competitive equilibrium output will be Q_C = _____
Label this output Q_C in the figure.

    (iii) The average cost for the industry will be $AC(Q_C)$ = _____

    (iv) The industry profit is now π = _____

    (v) The consumer surplus will be   CS = _____

    (vi) Welfare is now   W = _____

    (vii) Under monopoly, the deadweight loss was   DWL = _____
(Hint: If you completed the rest correctly above, you should not need to
compute the area of any additional triangle here.)

$/output

Q