

Name: \_\_\_\_\_

Student id: \_\_\_\_\_



**College of Business Administration  
Department of Economics  
Economic Foundations for MBA  
ECO 5937 – Section (4)  
O. Mikhail  
Fall 2001**

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## **Mid-Term Exam**

- This closed book exam is worth 100 points.  
The exam totals 41 multiple-choice questions and 2 short essay questions.  
For the multiple-choice part: Only your first 30 correct answers will count.  
Each correct multiple-choice answer is worth 2.7 points.  
For the short-essay part: The 2 questions are worth 20 points.  
Each short-essay question is worth 10 points.  
Allocate your time accordingly.
- Answer all the short essay questions in the given space below each question.
- Including the cover page, the exam totals 15 pages.
- Answer the multiple-choice questions on the computer sheet.
- DO NOT forget to write your name and your student id on both: the computer sheet and the exam booklet.
- Non-Programmable calculators and language dictionaries are allowed.
- At the end of the exam, hand-in the exam booklet and the computer sheet to the examiner.

**6:15 p.m. – 8:15 p.m.**

**CL1 - 122**

**September 20, 2001**

## **MULTIPLE-CHOICE: (80 points)**

1. Which of the following could not be a short-run decision?
  - a) hours a store should stay open
  - b) number of workers to hire
  - c) how many warehouses to build
  - d) the amount of inventory to stock
  - e) all of the above
  
2. Consumer surplus of an individual can be eliminated entirely by:
  1. raising the price until very few units are bought.
  2. charging a price for each unit that is equal to the individual's marginal value for each unit.
  3. raising the price until zero units are purchased.
  - a) 1 only
  - b) 3 only
  - c) 2 and 3 only
  - d) 2 only
  
3. The consumer surplus of the last unit of a good purchased is
  - a) unknown.
  - b) non-negative.
  - c) negative.
  - d) zero.
  - e) positive.
  
4. Which of the following pairs of goods are likely to be substitutes for a large group of consumers?
  - a) coffee and cream
  - b) eggs and toast
  - c) green beans and peas
  - d) pancakes and syrup.
  - e) wieners and buns

5. If the average-product curve is rising, then the marginal-product curve
- must lie below the average-product curve over this range.
  - must lie above the average-product curve over this range and must also be rising.
  - must lie above the average-product curve over this range.
  - must be falling.
  - can be either above or below the average-product curve, although it must be rising over the entire range.
6. The distance between the total cost curve and the total variable cost curve is
- marginal cost.
  - average fixed cost.
  - total fixed cost.
  - average total cost.
  - none of the above.
7. If the total revenue of producers rises for an initial cut in the price of their product but falls for further reductions in price, the price elasticity of demand for the product
- rises and then falls.
  - declines as price falls.
  - rises as price falls.
  - is zero.
  - is unity.

Use the following to answer questions 8-9:

The following table shows the demand schedule for museum admissions in a small city:

| <u>Price</u><br>(per visit per person) | <u>Quantity Demanded</u><br>(thousands of person-visits per year) |
|--|---|
| \$10                                   | 2   |
| \$ 8                                   | 4   |
| \$ 6                                   | 6   |
| \$ 4                                   | 8   |
| \$ 2                                   | 10  |

8. According to the table above, the elasticity of demand for museum admissions is
- relatively inelastic at all points on the demand curve.
  - greater at higher prices than at lower prices.
  - greater at lower prices than at higher prices.
  - constant at all points on the demand curve.
  - relatively elastic at all points on the demand curve.

9. According to the table above, between the prices of \$8 and \$10, the elasticity of demand is
- a) 3.
  - b) 2.
  - c) 1.
  - d) 2/3.
  - e) 1/3.
10. The condition required for a consumer to be maximizing utility, for any pair of products, X and Y, is
- a)  $P_X(MU_X) = P_Y(MU_Y)$ .
  - b)  $P_X = P_Y$ .
  - c)  $MU_X/P_Y = MU_Y/P_X$ .
  - d)  $MU_X = MU_Y$ .
  - e)  $MU_X/P_X = MU_Y/P_Y$ .
11. A family of short-run cost curves can be constructed from the production function because
- a) cost remains constant regardless of the factors used in production.
  - b) the production function is arbitrary.
  - c) the quality of the fixed factor depreciates.
  - d) each curve is associated with a different quantity of the fixed factor.
  - e) technology is continuously changing.
12. The imposition of a sales tax usually causes the price to consumers to \_\_\_\_\_, while the revenue of sellers \_\_\_\_\_.
- a) rise, remains unchanged
  - b) fall, remains unchanged
  - c) rise, falls
  - d) fall, falls
  - e) rise, rises

13. Consider butter and margarine. When the price of butter falls, the demand curve for margarine is likely to
- shift to the left.
  - shift to the right.
  - remain stationary, although its price will rise.
  - remain stationary although its price will fall.
  - remain stationary.
14. The more elastic of two linear demand curves can be determined by comparing their slopes if
- they are both vertical.
  - they intersect.
  - one is entirely inside the other.
  - they are both rectangular hyperbolas.
  - they are both horizontal.
15. At a garage sale, Dominique purchases a used sewing machine for \$30 when she was willing to pay \$55. The new sewing machine costs \$200. Dominique's consumer surplus would be \_\_\_\_\_.
- \$0.
  - \$145
  - \$170
  - \$120
  - \$25
16. The market demand curve is the
- horizontal sum of the individual consumer demand curves.
  - vertical sum of the individual demand curves.
  - horizontal sum of quantities demanded at a certain price.
  - vertical sum of the prices at a given quantity demanded.
  - vertical sum of the quantities demanded at a certain price.
17. If average product equals marginal product and both are positive, then total product
- is increasing as extra units of the variable factor are employed.
  - may be either increasing or decreasing as extra units of the variable factor are employed.
  - is decreasing as extra units of the variable factor are employed.
  - is at a maximum.
  - none of the above

18. The exact definition of point elasticity is

- a)  $\eta = \frac{dp}{dq} \cdot \frac{p}{q}$
- b)  $\eta = \frac{dq}{dp} \cdot \frac{p}{q}$
- c)  $\eta = \frac{dp}{p} \cdot \frac{dq}{q}$
- d)  $\eta = \frac{dq}{p} \cdot \frac{dp}{q}$

19. When an economist speaks of "demand" in a particular market, he/she is referring to

- a) the quantity that is desired but not satisfied by current supply.
- b) the entire relationship between quantity demanded and price.
- c) the quantity purchased at the current market price.
- d) only the quantity demanded by households at current market prices.

20. Income elasticity of demand measures the extent to which

- a) the price of a good changes when there is a change in income.
- b) real household income changes when there is a change in the price of a good.
- c) quantity demanded changes when there is a change in price.
- d) the quantity demanded of a good changes when income changes.
- e) one household's income changes when there is a change in the income of another household.

21. The period of time for which all factors of production and technology are variable is known as the

- a) very-short run.
- b) very-long run.
- c) short run.
- d) long run.

22. A change in demand is said to take place when there is

- a) a shift in the supply curve.
- b) a shift in the demand curve.
- c) a price change.
- d) a movement along the demand curve.

**23.** If we know that capital is fixed and a basket-producing firm can produce 36 baskets per day with 3 workers and 44 baskets per day with 4 workers, then we know all of the following EXCEPT:

- a) The average product of the fourth worker is 12.
- b) the firm has passed the point of diminishing marginal productivity.
- c) The marginal product is below the average product.
- d) The marginal product of the fourth worker is 8.
- e) The firm has passed the point of diminishing average productivity.

**24.** In economics, the term "utility" is defined as

- a) the system of basing the price of a good on its usefulness to society.
- b) the usefulness of a good.
- c) the usefulness of a theory to explain price determination.
- d) the total satisfaction received from consumption of a good.

**25.** Suppose a consumer can purchase only two goods, dish soap and apples. If the price of dish soap falls, and the consumption of apples increases, we can conclude that the increased consumption of apples is due to

- a) the substitution effect only.
- b) the income effect only.
- c) both the income effect and the substitution effect.
- d) neither the income effect nor the substitution effect.

**26.** Diminishing marginal utility implies

- a) that the total utility is negative.
- b) that the first unit of a good consumed will contribute most to the consumer's satisfaction.
- c) that the marginal utility of a good diminishes over time.
- d) that the total utility is increasing.
- e) that the last unit of a good consumed will contribute most to the consumer's satisfaction.

27. Marginal cost can be defined as
- a) the difference between average total cost and average variable cost.
  - b) the cost of an additional unit of a variable factor of production.
  - c) the cost per unit when the firm is operating at capacity.
  - c) the change in total cost resulting from an additional unit of output.
  - d) the change in fixed cost resulting from an additional unit of output.
28. If the demand for some good fluctuates, but supply is constant, then which of the following combinations would generally yield the greatest price fluctuations?
- a) large demand fluctuations and elastic supply
  - b) small demand fluctuations and inelastic supply
  - c) small demand fluctuations and elastic supply
  - d) large demand fluctuations and inelastic supply
29. The own-price elasticity of demand for a product tends to be greater
- a) the lower its price.
  - b) the more close substitutes for it there are.
  - c) the more broadly the product is defined.
  - d) the shorter the time span being considered.
  - e) the fewer close substitutes for it there are.
30. In economics, the term "sunk costs" means
- a) opportunity costs.
  - b) imputed costs.
  - c) costs that are never accounted for.
  - d) costs incurred in the past that involve no current opportunity costs.
  - e) costs incurred in the past that involve no imputed costs.
31. Suppose that the quantity demanded of skipping ropes rises from 1250 to 1750 units when the price falls from \$1.25 to \$.75 per unit. The price elasticity of demand for this product is
- a) 1.
  - b)  $3/2$ .
  - c) 2.
  - d)  $2/3$ .
  - e)  $1/3$ .

- 32.** An equilibrium price is
- a)** the price at which quantity demanded of the commodity is equal to the quantity supplied.
  - b)** the market-clearing price.
  - c)** the one toward which the price will tend in a free market.
  - d)** is reached in the marketplace through the interaction of the forces of demand and supply.
  - e)** all of the above.

The next 2 questions refer to the following:

Randolph is taking three courses this semester: economics, statistics, and finance. He has decided to spend 20 hours per week studying (in addition to attending all his classes) and his objective is to maximize his average grade, which means maximizing the total of his grades in the three courses. The table shows Randolph's estimate of the relation between time spend studying and his grade for each course.

| <u>Hours of Study</u> | <u>Grade In:</u> |                   |                |
|-----------------------|------------------|-------------------|----------------|
|                       | <u>Economics</u> | <u>Statistics</u> | <u>Finance</u> |
| 4                     | 63               | 54                | 68             |
| 5                     | 72               | 64                | 76             |
| 6                     | 79               | 72                | 82             |
| 7                     | 85               | 78                | 87             |
| 8                     | 88               | 83                | 90             |
| 9                     | 90               | 87                | 93             |
| 10                    | 92               | 89                | 95             |

**33.** How should Randolph allocate his time?

- a. 7 hours economics, 7 hours statistics, 6 hours finance
- b. 6 hours economics, 6 hours statistics, 8 hours finance
- c. 7 hours economics, 6 hours statistics, 5 hours finance
- d. 6 hours economics, 5 hours statistics, 7 hours finance
- e. none of the above

**34.** What is the maximized AVERAGE grade Randolph can earn if he studies 20 hours per week?

- a. 80
- b. 80.3
- c. 82
- d. 81.7
- e. none of the above

The next 2 questions refer to the following:

| <u>Level of Activity</u> | <u>Total Benefit</u> | <u>Total Cost</u> | <u>Marginal Benefit</u> | <u>Marginal Cost</u> | <u>Net Benefit</u> |
|--------------------------|----------------------|-------------------|-------------------------|----------------------|--------------------|
| 0                        | ----                 | 0                 | xx                      | xx                   | 0                  |
| 1                        | 200                  | 30                | ----                    | ----                 | ----               |
| 2                        | ----                 | ----              | 100                     | ----                 | 230                |
| 3                        | ----                 | ----              | ----                    | 50                   | 270                |
| 4                        | 450                  | ----              | ----                    | 65                   | ----               |
| 5                        | ----                 | 255               | 30                      | ----                 | ----               |
| 6                        | 500                  | ----              | ----                    | 75                   | ----               |

35. What is marginal benefit for the 4<sup>th</sup> unit of the activity?

- a. 65
- b. 60
- c. 55
- d. 50
- e. none of the above

36. What is the marginal cost of the 1<sup>st</sup> unit of the activity?

- a. 0
- b. 5
- c. 10
- d. 15
- e. none of the above

37. The market demand curve

- a. shows how much all consumers demand at various prices.
- b. is the vertical summation of the demand curves of all the consumers in the market.
- c. is quite complex to construct, given the demand curves of the individual consumers.
- d. all of the above.

38. The slope of an indifference curve shows

- a. the change in utility from an additional unit of the good.
- b. the rate at which the consumer is able to substitute one good in the market.
- c. is equal to the price ratio at all points.
- d. is the rate at which the consumer is willing to exchange one good for another, utility held constant.
- e. all of the above

**39.** Suppose that 2 units of  $X$  and 8 units of  $Y$  give a consumer the same satisfaction as 4 units of  $X$  and 2 units of  $Y$ . Then

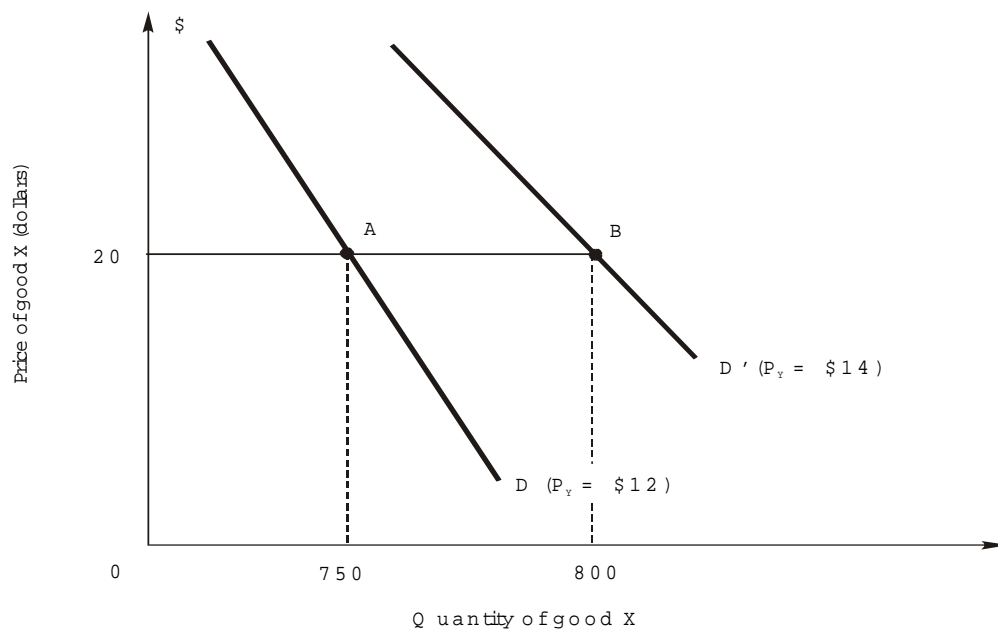
- a. the consumer is willing to give up 3 units of  $Y$  to obtain 1 more unit of  $X$ .
- b. the consumer is willing to give up 1 unit of  $Y$  to obtain 3 more units of  $X$ .
- c. the marginal rate of substitution of  $X$  for  $Y$  is 3.
- d. both a and c

**40.** If a drought increases the price of corn by 10% and decreases the quantity of corn demanded by 5%, then demand for corn is

- a. elastic and total revenue to corn farmers will decrease.
- b. inelastic and total revenue to corn farmers will decrease.
- c. elastic and total revenue to corn farmers will increase.
- d. inelastic and total revenue to corn farmers will increase.

41. Use the figure below to calculate the cross-price elasticity of demand for good  $X$  when the price of good  $Y$  increases from \$12 to \$14:

- a. 0.645
- b. 0.42
- c. 0.20
- d. 2.00
- e. 15.38



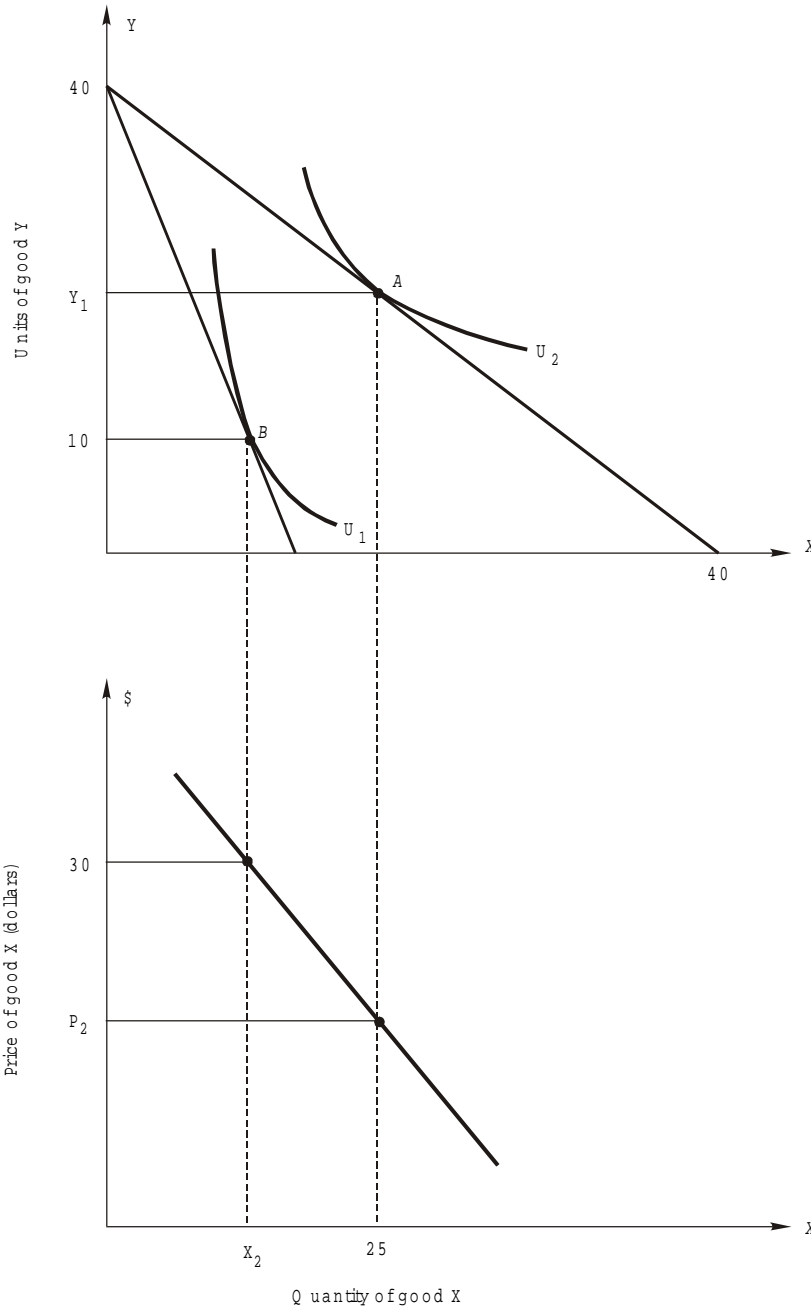
**SHORT ESSAY QUESTIONS: (20 points)**  
**ANSWER IN THE GIVEN SPACE BELOW EACH QUESTION**

**QUESTION I: (10 points)**

Consider your preferences for (i) Coke and potato chips and (ii) Coke and Pepsi. GRAPH and Explain why your indifference curves between Coke and potato chips are likely to look different from your indifference curves between Coke and Pepsi.

## QUESTION II: (10 points)

The next questions refer to the following graphs



The price of Y is \$15 per unit.

- Compute  $Y_1$
- Compute  $X_2$
- What does the curve in the lower graph show?

# SOLUTION

## Answer Key

1. c      how many warehouses to build  
Topic: Profit, Cost and Time Horizons
2. c      2 and 3 only  
Topic: Distinction Between Total & Marginal...
3. b      non-negative.  
Topic: Distinction Between Total & Marginal...
4. c      green beans and peas  
Topic: Demand
5. c      must lie above the average-product curve over this range.  
Topic: Total, Average and Marginal Product
6. c      total fixed cost.  
Topic: Total, Average, and Marginal Cost
7. b      declines as price falls.  
Topic: Own-Price Elasticity of Demand
8. b      greater at higher prices than at lower prices.  
Topic: Own-Price Elasticity of Demand
9. a      3.  
Topic: Own-Price Elasticity of Demand
10. e       $MU_X/P_X = MU_Y/P_Y$ .  
Topic: Marginal Utility and Consumer Choice
11. d      each curve is associated with a different quantity of the fixed factor.  
Topic: Total, Average, and Marginal Cost
12. c      rise, falls  
Topic: Incidence of a Sales Tax
13. a      shift to the left.  
Topic: Demand
14. b      they intersect.  
Topic: Own-Price Elasticity of Demand
15. e      \$25  
Topic: Distinction Between Total & Marginal...

16. a horizontal sum of the individual consumer demand curves.  
Topic: Extensions and Applications
17. a is increasing as extra units of the variable factor are employed.  
Topic: Total, Average and Marginal Product
- $$\eta = \frac{dq}{dp} \cdot \frac{p}{q}$$
18. b  
Topic: Appendix 5: A Formal Analysis of...
19. b the entire relationship between quantity demanded and price.  
Topic: Demand
20. d the quantity demanded of a good changes when income changes.  
Topic: Income Elasticity
21. b very-long run.  
Topic: Profit, Cost and Time Horizons
22. b a shift in the demand curve.  
Topic: Demand
23. a The average product of the fourth worker is 12.  
Topic: Total, Average and Marginal Product
24. d the total satisfaction received from consumption of a good.  
Topic: Marginal Utility and Consumer Choice
25. b the income effect only.  
Topic: Income and Substitution Effects
26. b that the first unit of a good consumed will contribute most to the consumer's satisfaction.  
Topic: Marginal Utility and Consumer Choice
27. d the change in total cost resulting from an additional unit of output.  
Topic: Total, Average, and Marginal Cost
28. d large demand fluctuations and inelastic supply  
Topic: Income Elasticity
29. b the more close substitutes for it there are.  
Topic: Own-Price Elasticity of Demand
30. d costs incurred in the past that involve no current opportunity costs.

Topic: Profit, Cost and Time Horizons

31. d      2/3.  
Topic: Own-Price Elasticity of Demand
32. e      all of the above.  
Topic: Equilibrium Price and Quantity

33. a  
33. d  
34. b  
35. e  
36. a  
37. d  
38. d  
39. d  
40. b  
41. d

## **SHORT ESSAY ANSWERS:**

### **QUESTION I:**

Question is exactly the same from the discussion questions of chapter 7. Just graph and explain perfect complements and perfect substitutes.

### **QUESTION II:**

a)  $Y_1=15$

b)  $X_2=15$

c) What does the curve in the lower graph show?

It shows a consumer's utility-maximizing choices of  $X$  changes when the price of  $X$  changes.