

Name: _____

Student id: _____



**College of Business Administration
Department of Economics
Economic Foundations for MBA
ECO 5937 – Section (2)
O. Mikhail
Fall 2001**

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, your student id and the version number 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.

BA 146

September 18, 2001

MULTIPLE-CHOICE: (80 points)

1. 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) small demand fluctuations and inelastic supply
 - b) large demand fluctuations and inelastic supply
 - c) small demand fluctuations and elastic supply
 - d) large demand fluctuations and elastic supply

2. Which of the following could not be a short-run decision?
 - a) hours a store should stay open
 - b) the amount of inventory to stock
 - c) number of workers to hire
 - d) how many warehouses to build
 - e) all of the above

3. 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) 2 and 3 only
 - b) 3 only
 - c) 2 only
 - d) 1 only

4. In economics, the term "utility" is defined as
 - a) the total satisfaction received from consumption of a good.
 - b) the usefulness of a theory to explain price determination.
 - c) the usefulness of a good.
 - d) the system of basing the price of a good on its usefulness to society.

5. If average product equals marginal product and both are positive, then total product
 - a) is increasing as extra units of the variable factor are employed.
 - b) is decreasing as extra units of the variable factor are employed.
 - c) is at a maximum.
 - d) may be either increasing or decreasing as extra units of the variable factor are employed.
 - e) none of the above

6. Income elasticity of demand measures the extent to which
- a) quantity demanded changes when there is a change in price.
 - b) the price of a good changes when there is a change in income.
 - c) the quantity demanded of a good changes when income changes.
 - d) real household income changes when there is a change in the price of a good.
 - e) one household's income changes when there is a change in the income of another household.
7. A change in demand is said to take place when there is
- a) a shift in the supply curve.
 - b) a movement along the demand curve.
 - c) a price change.
 - d) a shift in the demand curve.
8. The period of time for which all factors of production and technology are variable is known as the
- a) very-short run.
 - b) long run.
 - c) very-long run.
 - d) short run.
9. An equilibrium price is
- a) the one toward which the price will tend in a free market.
 - b) is reached in the marketplace through the interaction of the forces of demand and supply.
 - c) the price at which quantity demanded of the commodity is equal to the quantity supplied.
 - d) the market-clearing price.
 - e) all of the above.
10. Diminishing marginal utility implies
- a) that the total utility is increasing.
 - b) that the marginal utility of a good diminishes over time.
 - c) that the last unit of a good consumed will contribute most to the consumer's satisfaction.
 - d) that the first unit of a good consumed will contribute most to the consumer's satisfaction.
 - e) that the total utility is negative.

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

12. 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) $\eta = \frac{dq}{p} \cdot \frac{dp}{q}$

Use the following to answer questions 13-14:

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

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

13. According to the table above, between the prices of \$8 and \$10, the elasticity of demand is
- a) $2/3$.
 - b) 1.
 - c) 3.
 - d) 2.
 - e) $1/3$.
14. According to the table above, the elasticity of demand for museum admissions is
- a) greater at lower prices than at higher prices.
 - b) greater at higher prices than at lower prices.
 - c) relatively inelastic at all points on the demand curve.
 - d) constant at all points on the demand curve.
 - e) relatively elastic at all points on the demand curve.
15. Which of the following pairs of goods are likely to be substitutes for a large group of consumers?
- a) green beans and peas
 - b) coffee and cream
 - c) pancakes and syrup.
 - d) eggs and toast
 - e) wieners and buns

16. The imposition of a sales tax usually causes the price to consumers to _____, while the revenue of sellers _____.

- a) fall, remains unchanged
- b) rise, rises
- c) rise, remains unchanged
- d) fall, falls
- e) rise, falls

17. The market demand curve is the

- a) vertical sum of the quantities demanded at a certain price.
- b) vertical sum of the individual demand curves.
- c) horizontal sum of the individual consumer demand curves.
- d) horizontal sum of quantities demanded at a certain price.
- e) vertical sum of the prices at a given quantity demanded.

18. In economics, the term "sunk costs" means
- a) costs incurred in the past that involve no current opportunity costs.
 - b) costs incurred in the past that involve no imputed costs.
 - c) opportunity costs.
 - d) imputed costs.
 - e) costs that are never accounted for.
19. 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) $MU_X = MU_Y$.
 - d) $MU_X/P_Y = MU_Y/P_X$.
 - e) $MU_X/P_X = MU_Y/P_Y$.
20. When an economist speaks of "demand" in a particular market, he/she is referring to
- a) the quantity purchased at the current market price.
 - b) the entire relationship between quantity demanded and price.
 - c) only the quantity demanded by households at current market prices.
 - d) the quantity that is desired but not satisfied by current supply.
21. 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
- a) rises and then falls.
 - b) is zero.
 - c) is unity.
 - d) rises as price falls.
 - e) declines as price falls.
22. The own-price elasticity of demand for a product tends to be greater
- a) the shorter the time span being considered.
 - b) the lower its price.
 - c) the more broadly the product is defined.
 - d) the more close substitutes for it there are.
 - e) the fewer close substitutes for it there are.

23. 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) both the income effect and the substitution effect.
 - b) neither the income effect nor the substitution effect.
 - c) the substitution effect only.
 - d) the income effect only.
24. The more elastic of two linear demand curves can be determined by comparing their slopes if
- a) they are both vertical.
 - b) they intersect.
 - c) they are both rectangular hyperbolas.
 - d) one is entirely inside the other.
 - e) they are both horizontal.
25. Consider butter and margarine. When the price of butter falls, the demand curve for margarine is likely to
- a) remain stationary, although its price will rise.
 - b) shift to the right.
 - c) shift to the left.
 - d) remain stationary.
 - e) remain stationary although its price will fall.
26. The consumer surplus of the last unit of a good purchased is
- a) negative.
 - b) zero.
 - c) unknown.
 - d) positive.
 - e) non-negative.
27. The distance between the total cost curve and the total variable cost curve is
- a) total fixed cost.
 - b) marginal cost.
 - c) average fixed cost.
 - d) average total cost.
 - e) none of the above.

28. Marginal cost can be defined as
- a) the change in total cost resulting from an additional unit of output.
 - b) the cost of an additional unit of a variable factor of production.
 - c) the change in fixed cost resulting from an additional unit of output.
 - d) the difference between average total cost and average variable cost.
 - e) the cost per unit when the firm is operating at capacity.
29. 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 _____.
- a) \$25
 - b) \$170
 - c) \$145
 - d) \$0.
 - e) \$120
30. If the average-product curve is rising, then the marginal-product curve
- a) must lie below the average-product curve over this range.
 - b) must be falling.
 - c) must lie above the average-product curve over this range and must also be rising.
 - d) can be either above or below the average-product curve, although it must be rising over the entire range.
 - e) must lie above the average-product curve over this range.
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) $1/3$.
 - c) $3/2$.
 - d) 2.
 - e) $2/3$.
32. A family of short-run cost curves can be constructed from the production function because
- a) technology is continuously changing.
 - b) cost remains constant regardless of the factors used in production.
 - c) the production function is arbitrary.
 - f) the quality of the fixed factor depreciates.
 - g) each curve is associated with a different quantity of the fixed factor.

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 4th 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 1st 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

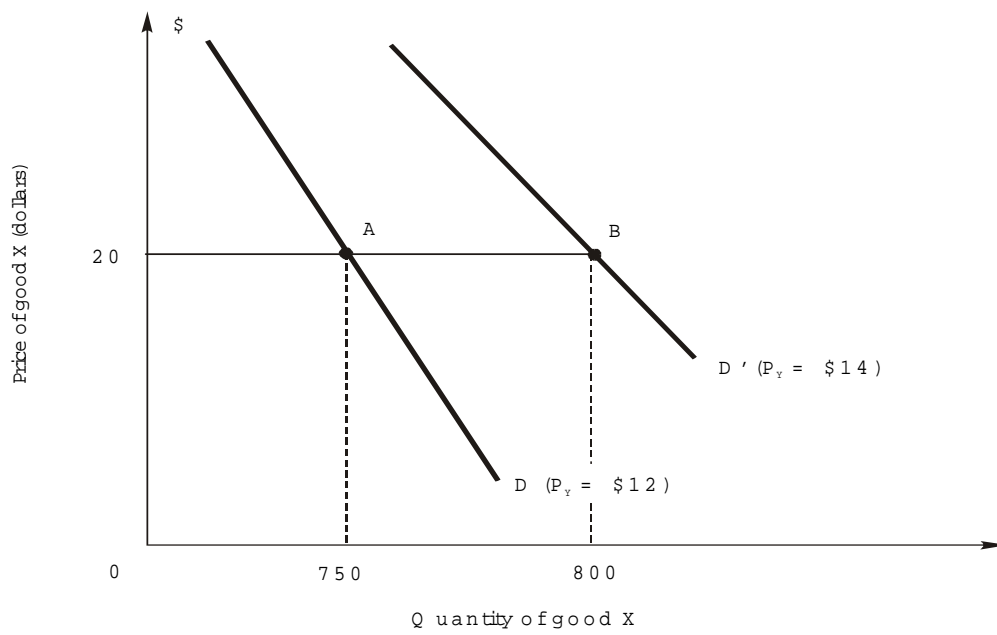
- a. the consumer is willing to give up 3 units of Y to obtain 1 more unit of X .
- b. the consumer is willing to give up 1 unit of Y to obtain 3 more units of X .
- c. the marginal rate of substitution of X for Y is 3.
- d. both a and c

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

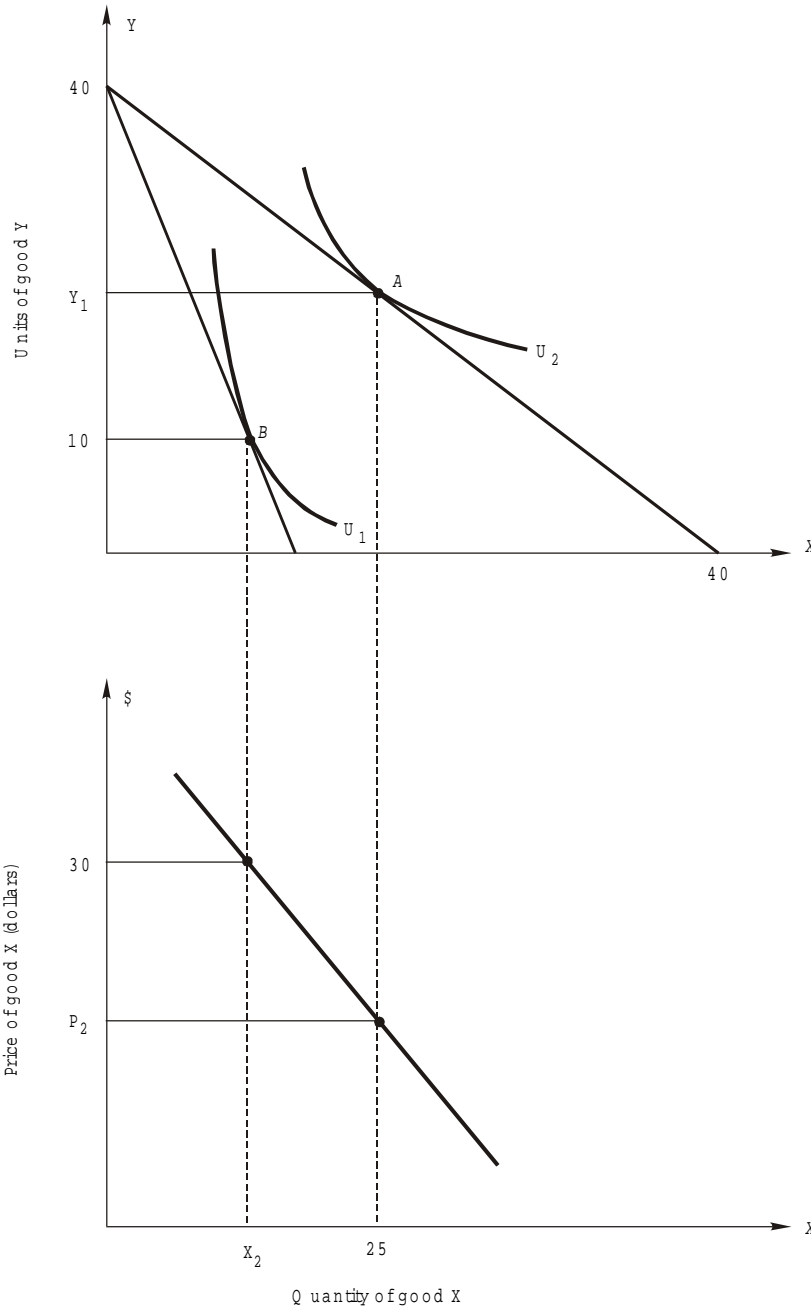
QUESTION I: (10 points)

Consider the education of a person as a process of production. Regard years of schooling as one variable factor of production.

- a) What are the other factors?
- b) What factors are fixed?
- c) At what point would you expect diminishing returns to set in?

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

MULTIPLE-CHOICE Answer Key

1. b large demand fluctuations and inelastic supply
Topic: Income Elasticity
2. d how many warehouses to build
Topic: Profit, Cost and Time Horizons
3. a 2 and 3 only
Topic: Distinction Between Total & Marginal...
4. a the total satisfaction received from consumption of a good.
Topic: Marginal Utility and Consumer Choice
5. a is increasing as extra units of the variable factor are employed.
Topic: Total, Average and Marginal Product
6. c the quantity demanded of a good changes when income changes.
Topic: Income Elasticity
7. d a shift in the demand curve.
Topic: Demand
8. c very-long run.
Topic: Profit, Cost and Time Horizons
9. e all of the above.
Topic: Equilibrium Price and Quantity
10. d that the first unit of a good consumed will contribute most to the consumer's satisfaction.
Topic: Marginal Utility and Consumer Choice
11. d The average product of the fourth worker is 12.
Topic: Total, Average and Marginal Product
12. b
$$\eta = \frac{dq}{dp} \cdot \frac{p}{q}$$

Topic: Appendix 5: A Formal Analysis of...
13. c 3.
Topic: Own-Price Elasticity of Demand
14. b greater at higher prices than at lower prices.
Topic: Own-Price Elasticity of Demand

15. a green beans and peas
Topic: Demand
16. e rise, falls
Topic: Incidence of a Sales Tax
17. c horizontal sum of the individual consumer demand curves.
Topic: Extensions and Applications
18. a costs incurred in the past that involve no current opportunity costs.
Topic: Profit, Cost and Time Horizons
19. e $MU_X/P_X = MU_Y/P_Y$.
Topic: Marginal Utility and Consumer Choice
20. b the entire relationship between quantity demanded and price.
Topic: Demand
21. e declines as price falls.
Topic: Own-Price Elasticity of Demand
22. d the more close substitutes for it there are.
Topic: Own-Price Elasticity of Demand
23. d the income effect only.
Topic: Income and Substitution Effects
24. b they intersect.
Topic: Own-Price Elasticity of Demand
25. c shift to the left.
Topic: Demand
26. e non-negative.
Topic: Distinction Between Total & Marginal...
27. a total fixed cost.
Topic: Total, Average, and Marginal Cost
28. a the change in total cost resulting from an additional unit of output.
Topic: Total, Average, and Marginal Cost
29. a \$25
Topic: Distinction Between Total & Marginal...
30. e must lie above the average-product curve over this range.

Topic: Total, Average and Marginal Product

31. e 2/3.

Topic: Own-Price Elasticity of Demand

32. e each curve is associated with a different quantity of the fixed factor.

Topic: Total, Average, and Marginal Cost

33. a

34. d

35. b

36. e

37. a

38. d

39. d

40. d

41. b

SHORT ESSAY ANSWERS:

QUESTION I:

Question is exactly the same from the discussion questions of chapter 8.

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.