BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

Economics 3311 – Intermediate Microeconomics

2nd summer 2012   Instructor: Muhammad Amreyeh

First Exam

Student Name: _____   Student No. 1101164

Multiple Choices

1.	(a)	(b)	(c)	(d)	(e)
2.	(a)	(b)	(c)	(d)	(e)
3.	(a)	(b)	(c)	(d)	(e)
4.	(a)	(b)	(c)	(d)	(e)
5.	(a)	(b)	(c)	(d)	(e)
6.	(a)	(b)	(c)	(d)	(e)
7.	(a)	(b)	(c)	(d)	(e)
8.	(a)	(b)	(c)	(d)	(e)
9.	(a)	(b)	(c)	(d)	(e)
10.	(a)	(b)	(c)	(d)	(e)
11.	(a)	(b)	(c)	(d)	(e)
12.	(a)	(b)	(c)	(d)	(e)
13.	(a)	(b)	(c)	(d)	(e)
14.	(a)	(b)	(c)	(d)	(e)
15.	(a)	(b)	(c)	(d)	(e)
16.	(a)	(b)	(c)	(d)	(e)
17.	(a)	(b)	(c)	(d)	(e)
18.	(a)	(b)	(c)	(d)	(e)
19.	(a)	(b)	(c)	(d)	(e)
20.	(a)	(b)	(c)	(d)	(e)
21.	(a)	(b)	(c)	(d)	(e)
22.	(a)	(b)	(c)	(d)	(e)
23.	(a)	(b)	(c)	(d)	(e)
24.	(a)	(b)	(c)	(d)	(e)

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Part A: The Multiple Choice Sections (2.5 points each).

1. Which of the following statements is False?
   (a) Marginal utility may be negative.
   (b) Marginal utility is the extra utility obtained by consuming one more unit of a good.
   (c) If the more is better assumption is satisfied, total utility will increase as consumption increases.
   (d) If the more is better assumption is satisfied, the marginal utility from consuming the second unit must b greater than the marginal utility from consuming the first unit.
   (e) All the points on the same indifference curve provide the same level of utility to an individual.

2. The negative slope of the demand curve reflects
   (a) Diminishing returns
   (b) Increasing marginal cost
   (c) Diminishing marginal usefulness
   (d) Increasing marginal usefulness.
   (e) Direct relationship between quantity demand and price level.

3. The change in the price of one good has no effect on the quantity demanded of another good, then the value of the cross- price elasticity of demand equal to
   (a) 1
   (b) 0
   (c) -1
   (d) ∞
   (e) Undefined

4. The utility function $U(x,y)=min[\frac{1}{2}x,y]$ describes what sort of preferences?
   (a) Perfect complements in the ratio of 1 units of x to every 2 unit of y.
   (b) Perfect substitutes in the ratio of 1 unit of x to every 2 units of y.
   (c) Perfect substitutes in the ratio of 2 units of x to every 1 unit of y.
   (d) Perfect complements in the ratio of 2 units of x to every 1 unit of y.
   (e) None of the above.

5. Clara's utility function is $U(x,y)= XY+2Y+X$. If her marginal rate of substitution is 3 (in absolute value) and she is consuming 10 units of good x, how many units of good y must she be consuming?
   (a) 24
   (b) 40
   (c) 13
   (d) 35
   (e) 40

   $$u(x,y) = 10y + 2y + 10$$
   $$u = 12y + 10$$
   $$\frac{y}{x} = 3 \qquad y = 3x$$

6. A consumer has utility function $U = x^2y$. If this consumer has 10 units of good x and 20 units of good y, then the consumer is just willing to give up _____ unit of y in order to get one more unit of x.
   (a) 0.25
   (b) 0.5
   (c) 1
   (d) 2
   (e) 4

   $$\frac{dx}{dy} = \frac{2yx}{x^2} = \frac{40}{10} = 4$$

   $$u = y(x+2) + x$$
   $$y = \frac{u}{(x+2)+x}$$

7. Which of the following is true concerning the income effect of a decrease in price?
   (a) It will lead to an increase in consumption only for a normal good.
   (b) It always will lead to an increase in consumption.
   (c) It will lead to an increase in consumption only for an inferior good.
   (d) It always will lead to a decrease in consumption.
   (e) None of the above

   $$\frac{dx}{dy} = -3 = \frac{y+1}{x+2}$$

2.

   $$3 = \frac{y+1}{12}$$

8. Rami divide her consumption between orange juice and bagels. Orange juice costs $4 per glass and bagels cos $3each. Rami consumes positive amounts of both goods, and has chosen consumption quantities where his marginal utility of orange juice is 8 utils per glass, his marginal utility of bagels is 16 utils per bagel, and he spends all her income. Which of the following statements is correct?

(a) Rami cannot increase utility further (أكثر), given her income.

(b) Rami can increase utility by consuming less orange juice and more bagels.

(c) Rami can increase utility by consuming more orange juice and fewer bagels.

(d) Rami should consume only orange juice.

(e) Rami should consume only bagels.

$MU_\Delta = 8$ $MU_b = 16$

$P_b = 2P_o$

$\frac{8}{4}$ $\frac{16}{3}$

9. A consumer has utility function $U = XY$. If this consumer is maximizing his utility by consuming 50 units of good x and 100 units of good y. If the consumer has $400, then which of the following be the prices of each good?

(a) Px = 2 and Py = 2

(b) Px = 2 and Py = 4

(c) Px = 4 and Py = 2

(d) Px = 4 and Py = 4

(e) Px = 8 and Py = 4

$50 * P_x + 100 P_y = 400$

$\frac{8}{4} \lessgtr \frac{16}{3}$

$100 + 200°$

10. If the demand curve is given by $Q = 6 - \frac{3}{8}P$, at which prices (if any) is the demand elastic? -3 -6

(a) P = 8

(b) P = 8/3

(c) 8 < P < 16

(d) 0 < P < 8

(e) P = 16

$-\frac{3}{8}P^{-1} * \frac{P}{Q} = \frac{-3}{8(6 - \frac{3}{8}P)} = 6$

48

$48 - \frac{2P3}{8P}$

$\frac{-3}{48 - 3P}$

11. If the demand curves for good X is given by the following equation: $Qx = I / (2Px - Py)$. Where I is the consumer income, Px is the price of good X, and Py is the price of good Y. Which of the following statements is/are True?

(a) The demand curve good X is homogeneous.

(b) The good is inferior.

(c) Goods X and Y are substitutes goods

(d) All of the above are true.

(e) Only a and c are true.

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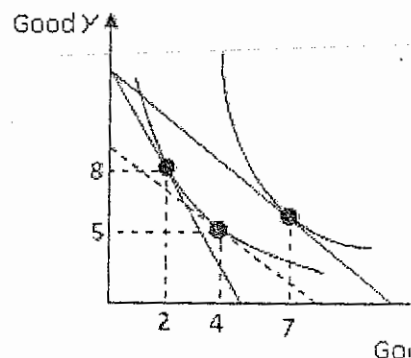$= 2I(2x 2P_x - 2P_y) * I$

$Q = \frac{I}{2 P_x - 2 P_y}$

12. When the price of sugar was "low," consumers in Jordan spent of $30 million annually (سنوياً) on its consumption. When the price of sugar doubled, consumer expenditures increased to $40 million annually. This indicates that

(a) The demand for sugar is inelastic.

(b) Sugar is a Giffen good.

(c) Sugar prices violate the law of demand.

(d) All of the above

(e) Both (b) and (c)

$\frac{I}{+ P_x}$

13. The following diagram illustrated a decrease in the price of Good X, the income effect of a decrease in the price of Good X is equal to:

(a) 2

(b) -2

(c) 3

(d) -3

(e) 5

Good Y

14. Total revenue in the market will fall if:

(a) Price rises on the elastic portion of the demand curve.

(b) Price falls on the elastic portion of the demand curve.

(c) Price rises on the inelastic portion of the demand curve.

(d) Price falls on the elastic portion, but stops at the mid-point of the demand curve.

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15. Which of the following pairs of goods are most likely to have a negative cross price elasticity of demand?
    (a) Coke and Pepsi.
    (b) Meat and orange juice
    (c) Gasoline and car
    (d) Coffee and chocolate
    (e) Tea and coffee

$-\dfrac{\Delta QA}{\Delta P_y}$

16. If the income elasticity of demand for chocolate candies is 1.2, what percentage change in income is necessary to reduce the amount of chocolate candies demanded by 15%?
    (a) increase income by 18%
    (b) decrease income by 18%
    (c) increase income by 12.5%
    (d) decrease income by 12.5%
    (e) equal zero

17. Ramez has utility function $U(A,B) = A\,B^2$, where A is the quantity of apples and B the quantity of banana he consume. If the price of apples is PA, the price of bananas is PB, and his income is I, then Ramez demand equation for apples is
    (a) $1/(3PB)$
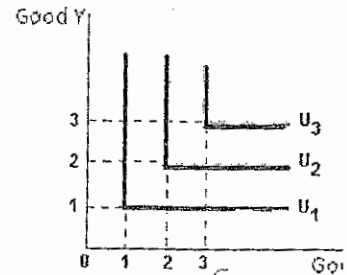   (b) $0.33PA * 1$
    (c) $1/(PA + PB)$
    (d) $I/(3PA)$
    (e) $1/(3A)$

$I = A\,PA + B\,PB$

18. Amal's preferences for good X and good Y are shown in the diagram. Based on the diagram, it can be inferred that:
    (a) Amal regards good X and good Y as perfect substitutes.
    (b) Amal regards good X and good Y as perfect complements.
    (c) Amal regards good X as useless good.
    (d) Amal regards good Y as economic bad.
    (e) Amal regards good Y as useless good.

19. The difference between what a consumer is willing to pay for a unit of a good and what must be paid when actually buying it is called
    (a) Marginal benefit
    (b) Marginal utility
    (c) Consumer surplus
    (d) Producer surplus
    (e) MRS

$B = \dfrac{2\,APA}{PB}$

$2APA = BPB$

20. Assume that used clothing is an inferior good. If the price of used clothing rises, then the substitution effect results in the person buying ___ of the good and the income effect results in the person buying ___ of the good.
    (a) More, more
    (b) More, less
    (c) Less, more
    (d) Less, less

21. Ahmad consumes two good. If prices of two good double, what will happen to Ahmad budget line?
    (a) The slope of the budget line increase.
    (b) The intercepts of the budget line will increase.
    (c) The intercepts of the budget line will decrease.
    (d) a and b are true
    (e) a and c are true

$I = A\,PA + B\,PB$

$A = \dfrac{I - B\,PB}{PA}$

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22. Which of the following statement is true?
    (a) Suppose that a consumer spends all of his income on good X. it means that for his consumer the price elasticit of demand for good X is zero
    (b) The price elasticity of demand for a vertical demand curve is equal to zero.
    (c) If a consumers spend $15 a month on good X, regardless of whether the price they pay goes up or down. Thi implies that the price elasticity of demand for good X is -1.
    (d) The demand curve for good with few close substitutes is elastic
    (e) The income elasticity for good Y is equal to zero, this suggests that goods Y is a Giffen good

23. Given these three individual demand curves for good X: $P = 60 - 2Q$ & $P = 36 - 3Q$ & $P = 24 - 6Q$. What is the market demand equation for good X?
    (a) $P = 120 - 11Q$
    (b) $Q = 120 - P$
    (c) $Q = 46 - P$
    (d) $Q = 46 - \%P$
    (e) $P = 120 - 5Q$

$$Q = \frac{-P+60}{2}$$
$$30 - .5P \qquad Q = \frac{36-P}{3} \qquad \frac{24-P}{6} \qquad 11_a$$
$$Q = 46 -$$

24. Suppose demand for good A is given by $Qd = 400 - 10Pa + 4Pb + 0.8 I$. Where Pa is the price of good A, Pb is the price of some other good B, and I is income. Assume that Pa is currently $10, Pb is currently $5, and I is currently $100. The cross-price elasticity of the demand for good A with respect to the price of good B at the current situation is
    (a) − 0.25
    (b) 2
    (c) 0.05
    (d) -0.05
    (e) 0.25

$$400 - 100 + 20 = 320 + 80 = 400$$
$$400 - 160 + 20 \cdot 2 + 80 \qquad 5.05 -$$
$$= 400/2$$
$$\frac{.2}{.01} =$$
$$.1 \times 4 = .4$$
$$.1 = 1$$

Answer each of the following questions in the space provided. **SHOW YOUR WORK!**

Question # 1 (16 Points)

Suppose the demand curve for a good is given by the equation $P = 10 - 0.2\dot{Q}$ and the supply curve is given by th
equation $P = 300 + \frac{1}{2}Q$, where P represents the price of the good (measured in dollars per unit) and Q represent
the quantity of the good (measured in units per week).

a. What is the equilibrium price and quantity for this market?
b. At the equilibrium price, what is the price elasticity of demand for the good? Is the demand for good elastic, inelastic, or unitary elastic?
c. In order to raise revenue from good sales, should producer change the price of their good? If so, should they raise or lower prices? Explain how you know.
d. Suppose that at each price level consumers decided to decrease demand by 18 units. What is the new equilibrium price and quantity?

(a) at equilibrium $Q_d = Q_s$, $D: Q = \frac{10 - P}{.2}$

$Q_d = 50 - 5P$

$\Rightarrow 50 - 5P = 2P - 600$ $S: Q_s = 600 + 2P$

$650 = 7P \Rightarrow P = 93$ $= 2P - 600$

$P = 10 - .2Q$

$93 = 10 - .2Q$

$1 - .2Q = 83$ $Q = \frac{83}{.2} = 415$ units

16/16

(b) $E_{Qd} = \frac{dQ}{dP} \cdot \frac{P}{Q} = -5 \times \frac{P}{Q} = -5 \times \frac{93}{415} = -1.12 < -1$

then :- the demand is elastic

(c) yes, they should reduce their price, because af the elastic portion of the D. curve, reducing the price by certain percentage will result in increase in More Quantity demanded than the % Δ in P & Then the TR will go up

(d) New $D \Rightarrow Q = 50 - 5P - 18 = 32 - 5P$
the supply still the same. So $32 - 5P = 2P - 600$
$\Rightarrow 7P = 632 \Rightarrow P = 90.3$
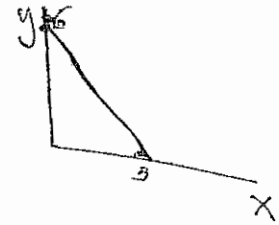the $|Q| = |32 - 5P| \Rightarrow$ then $Q = 419.5$

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A. Faten considers goods X and Y to be perfect substitutes at the rate of 1:1. The prices of good X is $12 and good Y$10. His income is $60. How many units of X and Y will she consume in order to max utility?

Since the goods are perfectly substitues(1:1) she will consume only the cheaper one,

$$Y_{Max} = \frac{60}{10} = 6 \text{ units of } y$$

$$X_{Max} = \frac{60}{12} = 5 \text{ units}$$

she will consume 6 units of (y)

$$\frac{dx}{dy} = \frac{y}{x} = \frac{Px}{Py} \Rightarrow x = \frac{yPy}{Px} = \frac{I - xPx}{Px}$$

B. A consumer has utility function $U(X,Y) = 3XY$. The marginal rate of substitution is $MRS = Y/X$.
(a) Find the demand function for good X
(b) Calculate the income elasticity of demand for good X if Px =$2, Py = $3, I= $120. Is good X a normal good or an inferior good? Explain

(a) $MRS = \frac{y}{x} = \frac{MU_x}{MU_y} = \frac{3y}{3x}$ slope $= \frac{y}{x}$

(b) at the Max utility : $MRS = \frac{Px}{Py} = \frac{y}{x}$

$$\Rightarrow x = \frac{yPy}{Px}$$

$I_1 = 120$

$i_2 = 120 + 120 \times -6 = 121.2$

$Q_1 =$

P_{0i} $\frac{Q_2 - Q_1}{Q_2 + Q_1} \times \frac{P_2 + P_1}{P_2 - P_1}$