بسم الله الرحمن الرحيم

22

Birzeit University
Economic Department
Second Hour Exam Economic 131

× 10

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Cover Sheet:-

1.	(A)	(B)	(C)	(D)
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25.	(A)	(B)	(C)	(D)

50 Excellent
42
92

8. What do the income effect, the substitution effect, and diminishing marginal utility have in common?
   A) They all help explain the upsloping supply curve.
   B) They all help explain the downsloping demand curve.
   C) They are all empirically measurable(يقاس تطبيقيا)
   D) All are required to explain the utility-maximizing position of a consumer.

9. Price elasticity of supply is:
   A) greater in the long run than in the short run.
   B) greater in the short run than in the long run.
   C) independent (مستقل عن)of time.
   D) positive in the short run but negative in the long run.

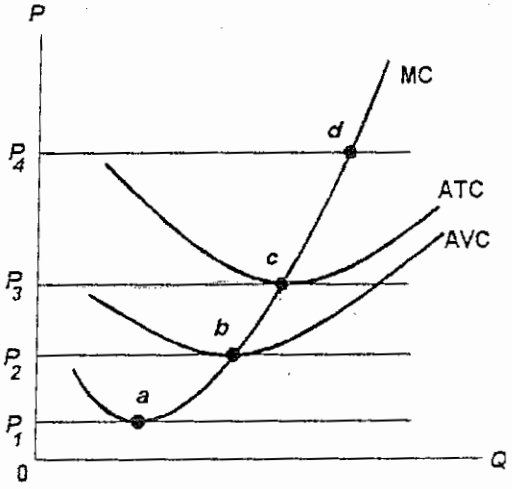
Use the following to answer question 10:

Answer the next question(s) on the basis of the following information:

Number of workers	Total product	Marginal product
0	0	--
1	8	8
2	18	10
3	25	
4	30	
5		3
6	34	

10. Refer to the above data. When two workers are employed:
    A) total product cannot be determined (يحدد) from the information given.
    B) average product is 10.
    C) total product is 20.
    D) total product is 18.

Use the following to answer question 11:



Part I: **50%**

1. If a firm increases all of its inputs by 10 percent and its output increases by 15 percent, then:
   A) the firm's long-run ATC curve will be rising.
   B) the law of diminishing returns is taking hold.
   C) it is encountering economies of scale.
   D) it is encountering (يواجه) diseconomies of scale.

2. "A fall in the price of a good increases the real income or purchasing power of consumers so that they are able to buy more of the product." This statement best describes:
   A) the substitution effect.
   B) a complementary good.
   C) an inferior good.
   D) the income effect.

3. Normal profit is:
   A) determined by subtracting explicit costs from total revenue.
   B) the return to the entrepreneur when economic profits are zero.
   C) the average profitability of an industry over the preceding 10 years.
   D) determined by subtracting implicit costs from total revenue.

4. A firm can sell more or less output at a constant price. Demand is thus:
   A) relatively inelastic
   B) relatively elastic
   C) perfectly elastic
   D) perfectly inelastic

5. To the economist total cost includes:
   A) implicit, but not explicit, costs.
   B) explicit, but not implicit, costs.
   C) explicit and implicit costs, including a normal profit.
   D) neither implicit nor explicit costs.

6. Marginal utility:
   A) is equal to total utility divided by the number of units consumed.
   B) is equal to total utility if the demand curve is linear.
   C) diminishes as more of a product is consumed.
   D) increases as more of a product is consumed.

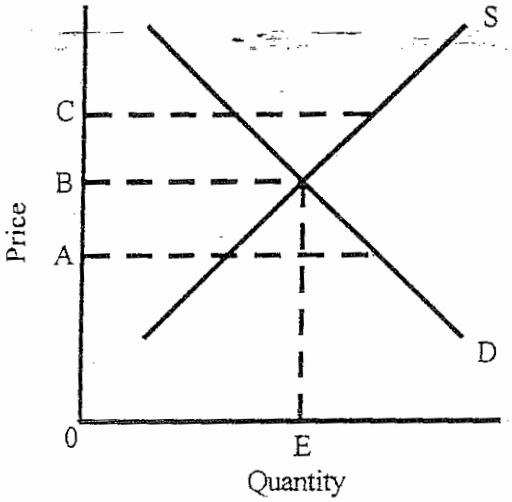
7. If $MU_a/P_a = 100/\$35 = MU_b/P_b = 300/? = MU_c/P_c = 400/?$, the prices of products *b* and *c* in consumer equilibrium:
   A) cannot be determined from the information given.
   B) are \$100 and \$200 respectively.
   C) are \$105 and \$175 respectively.
   D) are \$105 and \$140 respectively.

11. Refer to the above diagram for a purely competitive producer. If product price is P_3:
    A) new firms will enter this industry.
    B) the firm will earn an economic profit.
    C) the firm will maximize profit at point *d*.
    D) economic profits will be zero.

12. Which of the following industries most closely approximates pure competition?
    A) clothing
    B) steel
    C) Automobiles
    D) agriculture

13. Firms seek to maximize:
    A) per unit profit.
    B) market share.
    C) total revenue.
    D) total profit.

Use the following to answer question 14:



14. Refer to the above diagram. A government-set maximum permissible (مسموح) interest rate is best illustrated by:
    A) price A.
    B) price B.
    C) quantity E.
    D) price C.

15. A purely competitive seller is:
    A) both a "price maker" and a "price taker."
    B) neither a "price maker" nor a "price taker."
    C) a "price taker."
    D) a "price maker."

16. The diamond-water paradox occurs because:
    A) the price of a product is related to its total utility, not its marginal utility.
    B) water is, in fact, very scarce in certain regions of the world.
    C) diamonds are more useful than water.
    D) the price of a product is related to its marginal utility, not its total utility.

17. If the money income of a consumer decreases and, as a result, his or her demand for product X increases, product X is:
    A) a complementary good.
    B) an inferior good.
    C) a normal good.
    D) a substitute good.

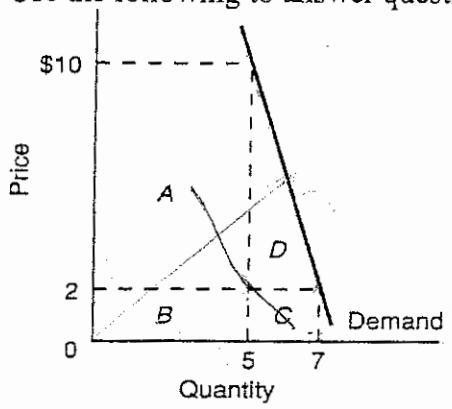
18. At each point on an indifference curve(منحنى السواء):
    A) marginal utility is the same.
    B) the prices of the two products are the same.
    C) total utility is the same.
    D) money income is the same.

19. Moving upward on a downward-sloping straight-line demand curve, we find that price elasticity:
    A) increases continuously.
    B) may either increase or decrease.
    C) decreases continuously.
    D) is constant.

20. Fixed cost is:
    A) the cost of producing one more unit of capital, say, machinery.
    B) usually zero in the short run
    C) average cost multiplied by the firm's output.
    D) any cost which does not change when the firm changes its output.

21. If the price of A is $12 and the price of B is $3, the budget line tells us that a consumer in effect can trade:
    A) 12 units of A for 3 of B.
    B) 1 unit of A for 4 of B.
    C) 1 unit of B for 4 of A.
    D) 1 unit of A for 3 of B.

Use the following to answer question 22:

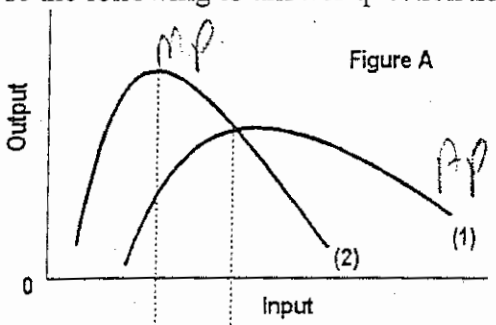


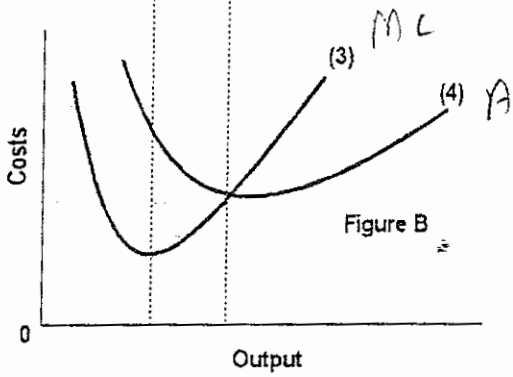
22. Refer to the above diagram. If price falls from $10 to $2, total revenue:
A) rises from C + D to B + A and demand is elastic.
B) falls from A + B to B + C and demand is inelastic.
C) rises from A + B to A+ B + D + C and demand is elastic.
D) falls from A + D to B + C and demand is inelastic.

23. The long run is characterized by(يتصف بـ):
A) the ability of the firm to change its plant size.
B) at least one fixed input.
C) the relevance(ذا علاقة)of the law of diminishing returns.
D) insufficient (عدم كفاية) time for firms to enter or leave the industry.

24. The formula for cross elasticity of demand is percentage change in:
A) quantity demanded of X/percentage change in income.
B) price of X/percentage change in quantity demanded of Y.
C) quantity demanded of X/percentage change in price of X.
D) quantity demanded of X/percentage change in price of Y.

Use the following to answer question 25:





25. Refer to the above short-run production and cost data. The curves of Figures A and B suggest that:
    A) AVC cuts MC at the latter's maximum point.
    B) AVC reaches a minimum where AP is at its maximum.
    C) AFC declines so long as output increases.
    D) average product and average variable cost reach their maximum points at the same output.

Refer to the above short Run production

Refer to the above short Run production

Run Production

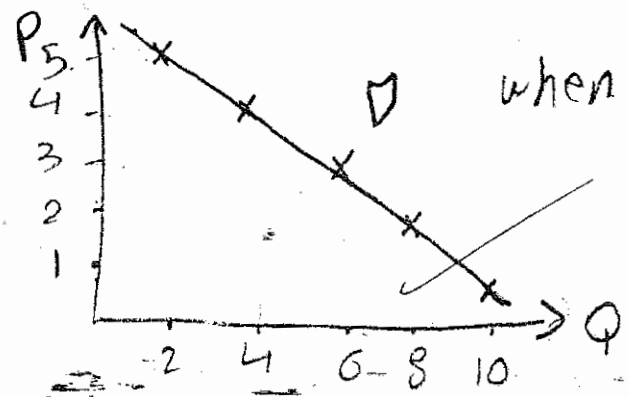
Essay 50% Answer Question 2 and any other 2 questions

Question One:-

Given the demand schedule in the table below

Product Price (P)	Quantity Demanded (Qd)
5	2
4	4
3	6
2	8
1	10

a) Draw the demand in the space below



b) Calculate price elasticity of demand in price falls from 4-3

$$E_D = \frac{\frac{Q_2 - Q_1}{\frac{Q_2 + Q_1}{2}}}{\frac{P_2 - P_1}{\frac{P_2 + P_1}{2}}} = \frac{\frac{6-4}{5}}{\frac{3-4}{3.5}} = \frac{\frac{2}{5}}{\frac{-1}{3.5}} = \frac{2}{5} \times \frac{3.5}{1} = 1.4$$

the (-) sign because of the down sloping of the D curve.

so the product is elastic because ED > 1

c) Based on your answer in (b), the fall in price causes total expenditure on the good to ~~increase~~ become demand is elastic.

16

$$\frac{\frac{2}{10}}{\frac{-1}{7}} = \frac{2}{10} \times \frac{-7}{1} = \frac{-14}{10}$$

4.3 x -7 =

$4x + 5y = 18$

$2x + 5y = 18$

Question Two: -

A consumer who gets utility from consuming goods X and Y with $P_x = 4$ and $P_y = 2$ and income = 18

Units of X	MUx	Units of Y	MUy
1	20	1	16
2	16	2	14
3	12	3	12
4	8	4	10
5	6	5	8
6	4	6	6

MUx	MUx/Px	MUx/Px ×2
5	8 *	10
4	7	8 *
3	6 #	6 #
2	5	4 ~
1.5	4 ~	3 △
1	3 △	2

a) What combinations would the consumer buy of each good (show your work)

We can buy 1 product of X and 4 // of y
we choose or // // 2 // // X // 5 // of y → because $\frac{MUy}{Py} = \frac{MUx}{Px}$
// // 3 // // X // 6 of y <In

but to make utility maximization he should consume exactly his income 18

$Qx Px + Qy Py = Income$? $2 \times 4 + 2 \times 5 = 8 + 10 = 18 = Income$? so we choose

b) If P_x falls to 2 find the demand schedule for Y and graph it.

here we have 4 combination

1y and 2x
3y and 3x
5y and 4x
6y and 5x

} we choose 5 product of y and 4 product of X to consume <In
$5 \times 2 + 4 \times 2 = 18$

2 product of X and 5 from y

The demand shedule for y return the same but the demand of X increase

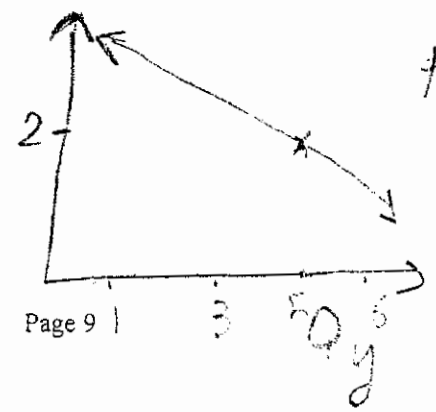
c) (Bonus to midterm 1) are X and Y complements or substitutes. Why?

$\text{cross } Exy = \frac{\Delta Qy}{\Delta Px} = \frac{5-5}{\frac{5+5}{2}} \Big/ \frac{4-2}{\frac{4+2}{2}} = 0$

so x and y are unrelated.

Excellent

Qy	Py
1	2
3	2
5	2
6	2



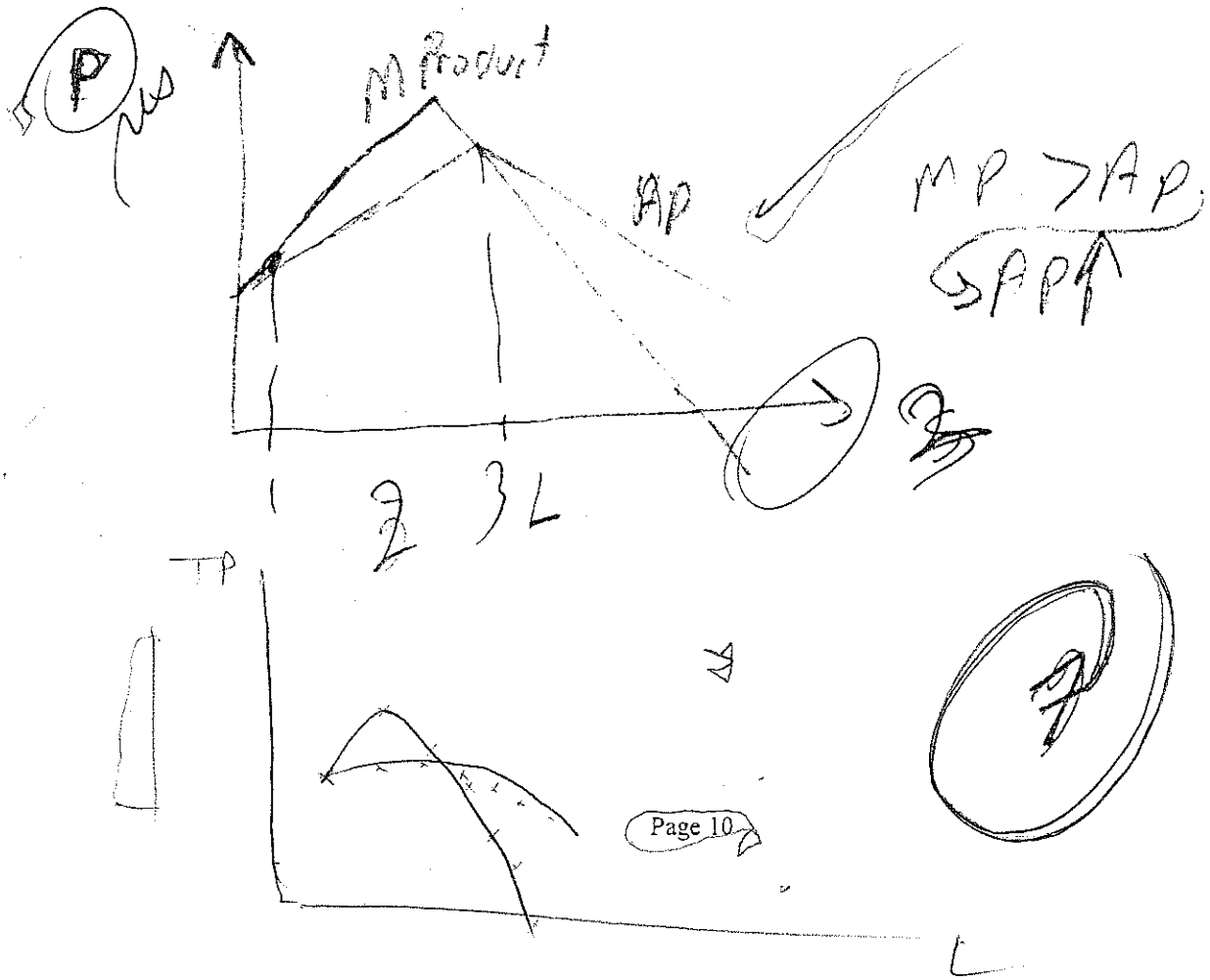
the demand curve for y remains the same.

Question Three: -

Inputs of labor	Total Product	Marginal Product	Average Product
0	0		
1	45	45	45
2	102	57	28.5
3	153	51	17
4	195	42	10.5
5	222	27	5.5
6	240	18	3
7	249	9	1.2
8	246	-3	-.3

a) Complete the table above
b) Marginal product begins to diminish with which worker, briefly explain.

c) From the data above plot the AP & MP curves



35

90 v. good

Birzeit University
Economic Department
Second Hour Exam Economic 131
V1

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15

Part I: Write T if the statement is true, F if it is false. *(15 points)*

No.	*Question*	*True*	*False*
1	An increase in the real income of a consumer will result from an increase in the price of a product the consumer is buying.		F
2	A consumer's demand curve for a product is downsloping because total utility decreases as more of the product is consumed.		F
3	The theory of consumer behavior assumes that consumers act rationally to get the most from their money.	T	
4	When consumers are maximizing total utility, the marginal utilities of the last unit of every product they buy are identical (متساوي)		F
5	The marginal utility of product X is 15 and its price is $5, while the marginal utility of product Y is 10 and its price is $2. The utility- maximizing rule suggests that there should be less consumption of product Y.	T	
6	In the short run the size (or capacity) of a firm's plant is fixed.	T	
7	The resources employed by a firm are all variable in the long run and all fixed in the short run.		F
8	When total product is increasing at a decreasing rate, marginal product is positive and increasing.		F
9	The larger the output of a firm, the smaller the fixed cost of the firm.		F
10	The law of diminishing returns explains why increases in variable costs associated with each 1-unit increase in output become greater and greater after a certain point.	T	
11	Marginal cost is the change in fixed cost divided by the change in output.		F
12	Marginal cost is equal to average variable cost of the output at which average variable cost is at a minimum.	T	
13	One explanation why the long-run average-total-cost curve of a firm rises after some level of output has been reached is the law of diminishing returns.		F
14	If a firm has constant returns to scale in the long run, the total cost of producing its product does not change when it expands or contracts (يقلل)its output	T	
15	When average product is falling, marginal product is greater than average product.		F
16	The income and substitution effects will ~~include~~ induce the consumer to buy more of normal good Z when the price of Z increases.		F
17	The diamond-water paradox is explained by the fact that the total utility derived from water is low while the total utility derived from diamonds is high.		F
18	Economic or pure profit is an explicit cost, while normal profit is an implicit cost.		F

39

Part II: Circle the best Answer: - ***(45 points)***

1) Which would best describe the short run for a firm as defined by economists?
   a. The plant for a firm is variable.
   b. The plant capacity for a firm is fixed.
   c. There are diseconomies of scale.
   d. There are economies of scale.

Use the following table to answer Questions 2 and 3. Assume that the only variable resource used to produce output is labor.

Amount of labor	*Amount of output*
1	3
2	8
3	12
4	15
5	17
6	18

2) The marginal product of the fourth unit of labor is:
   a. 2 units of output.
   b. 3 units of output.
   c. 4 units of output.
   d. 15 units of output.

3) When the firm hires(توظف) four units of labor the average product of labor is:
   a. 3 units of output.
   b. 3.75 units of output.
   c. 4.25 units of output.
   d. 15 units of output.

$\therefore TP/4 = 15/4$

4) Because the marginal product of a resource at first increases and then decreases as the output of the firm increases:
   a. Average fixed cost declines as the output of the firm increases.
   b. Average variable cost at first increases and then decreases.
   c. Variable cost at first increases by increasing amounts and then increases by decreasing amounts.
   d. Total cost at first increases by decreasing amounts and then increases by increasing amounts.

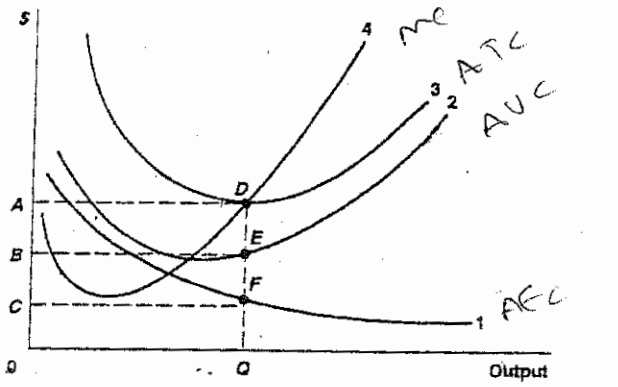
5) Marginal cost and average variable cost are equal at the output at which:
   a. Marginal cost is a minimum.
   b. Marginal product is a maximum.
   c. Average product is a maximum.
   d. Average variable cost is a maximum.

MC
AVC

6) Average variable cost may be either increasing or decreasing when:
   a. Marginal cost is decreasing.
   b. Marginal product is increasing.
   c. Average fixed cost is decreasing.
   d. Average total cost is increasing.

Question 7 and 8 are base on the following figure:

Figure



7) In the figure, curves 1,3, and 4, respectively, represent:
   a. Average variable cost, marginal cost, and average total cost.
   b. Average total cost, average variable cost, and marginal.
   c. Average fixed cost, average total cost, and marginal cost.
   d. Marginal cost, average total cost, and average variable cost.

8) as output increases beyond the level represented by Q:
   a. marginal product is rising.
   b. Marginal product is falling.
   c. Total fixed costs are rising.
   d. Total costs are falling.

9) At an output of 10,000 units per year, a firm's total variable costs are $50,000 and its average fixed costs are $2. The total costs per year for the firm are:
   a. $50,000
   b. $60,000
   c. $70,000
   d. $80,000

10) If you know that total fixed cost is $100, total variable cost is $300, and total product is 4 units, then:
   a. Marginal cost is $50
   b. Average fixed cost is $45
   c. Average total cost is $125
   d. Average variable cost is $75

11) Which factor contributed (يساهم) to economies of scale?

a. Less efficient use of capital goods.
b. Less division of labor and specialization
c. Greater specialization in management of a firm
d. Greater difficulty controlling the operations of a firm.

12) The reason the substitution effect works to encourage (يشجع)a consumer to buy more of a product when its price decreases is:

a. The real income of the consumer has been increased.
b. The real income of the consumer has been decreased.
c. The product is now relatively less expensive then it was.
d. Other products are now relatively less expensive than they were.

13) After eating eight chocolate chip cookies, you are offered a ninth cookie. You turn down (رفض) the cookie. Your refusal indicates that the:

a. Marginal utility for chocolate chip cookies is negative.
b. Total utility for chocolate chip cookies is negative.
c. Marginal utility is positive for the eighth and negative for the ninth cookie.
d. Total utility was zero because you ate one cookie and refused the other.

14) Suppose that the prices of A and B are $3 and $2, respectively, that the consumer is spending her entire income and buying 4 units of A and 6 units of B, and that the marginal utility of both the fourth of A and the sixth unit of B is 6. It can be concluded that the consumer should buy:

a. More of both A and B
b. More of A and less of B
c. Less of A and more of B
d. Less of both A and B

15) The price of water is substantially less then the price of diamonds because:

a. The marginal utility of a diamond is significantly less than the marginal utility of a gallon of water.
b. The marginal utility of a diamond is significantly greater than the marginal utility of a gallon of water.
c. The total utility of diamonds is greater than the total utility of water.
d. Diamonds have a low marginal utility.

Part III: Answer the following questions.

Question One:- *(20 points)*

The following table represents the utility derived by a consumer from consuming two goods X and Y.

Q_x	Tu_x	Mu_x	Mu_x/P_x	Q_y	Tu_y	Mu_y	Mu_y/P_y
1	45	~~30~~ 45	30	1	40	40	10
2	75	~~30~~ 30	20	2	76	36	9
3	95	~~15~~ 20	13.3	3	108	32	8
4	110	15	10	4	136	28	7
5	122	12	8	5	160	24	6
6	132	10	6.67	6	180	20	5
7	141	9	6	7	196	16	4
8	148.5	7.5	5	8	208	12	3

Suppose that the price of X (P_x) is \$1.5, the price of Y (P_y) \$4 and consumer's income \$36.

a) Fill in the blanks in the above table.
b) Find all combinations that satisfy the utility – Maximizing condition.
c) Which is the equilibrium (utility – Maximizing) combination for this consumer?
d) What conditions are satisfied in C for utility Maximization

Question Two:- *(10 points)*

The following table shows the total production of a firm as the quantity of labor increased

Quantity of Labor employed	*Total output*	*Marginal Product*	*Average Product*
1	5	5	5
2	11	6	5.5
3	18	7	6
4	24	6	6
5	29	5	5.8
6	~~22~~ 33	4	5.5
7	36	3	5.1
8	38	2	4.75

Calculate the Marginal products and Average products of the various quantities of labor and enter them in the table.

$MP = \frac{\Delta \text{ Tout put}}{\Delta \text{ Labor}}$

$MP_1 = \frac{11-5}{2-1} = 6$

$MP_2 = \frac{18-11}{3-2} = 7$

$MP_3 = \frac{24-18}{4-3} = 6$

$MP_4 = \frac{29-24}{5-4} = 5$

$MP_5 = \frac{33-29}{6-5} = 4$

$MP_6 = \frac{36-33}{7-6} = 3$

$MP_7 = \frac{38-36}{8-7} = 2$

$AP = \frac{\text{Tout put}}{QL}$

$AP_1 = \frac{5}{1} = 5$

$AP_2 = \frac{11}{2} = 5.5$

$AP_3 = \frac{18}{3} = 6$

$AP_4 = \frac{24}{4} = 6$

$AP_5 = \frac{29}{5} = 5.8$

$AP_6 = \frac{33}{6} = 5.5$

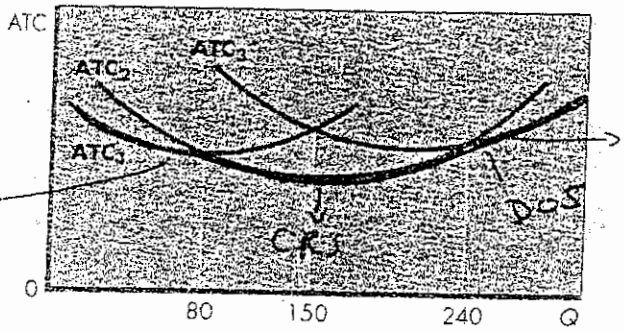
$AP_7 = \frac{36}{7} = 5.$

$AP_8 = \frac{38}{8} = 4.7$

Question Three:- ***(10 points)***

Suppose a firm has only three possible plant-size options, represented by the ATC curves shown in the accompanying figure.

Figure



What plant size will the firm choose in producing?

a) 50 : ATC1 (The first one).
b) 130 : ATC2 (The second one)
c) 160 : ATC2 (The second one).
d) 250 units of output? Draw the firm's long-run average cost curve on the diagram and describe this curve.

q.1.

d) 250 units (ATC3) ~~at~~ The third one.

Good Luck

~~The average cost car long run~~

every point on the ~~ATC cu~~ long run ATC curve represents the lowest (minimum) amout of cost that is needed to produce the wanted quantity on the short run ATC curves, ~~and it is the~~

And Long run ATC curve is a smooth and it's ~~the~~ a large number of short run ATC curves ~~that~~ at their minimum costs. to produce the maximum quantity.

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

Second Hour Exam

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Economics 131
First Semester 2005/2006

99

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Mr. Ayhab Sa'ad (Section 3)
Mrs. Shireen Basha (Section 4)

***PART I*: Multiple-choice questions (54 points).**
Circle the best answer for each of the following questions:

54

1. In microeconomics theory, it is assumed that the goal of a business firm is to
   a. maximize utility.
   b. maximize output.
   c. maximize profits. ✓
   d. maximize sales.
   e. minimize costs.

2. A firm will break-even if $P = MR = ATC$
   a. price is equal to total revenue.
   b. average total cost equals price. $ATC = P$ $ATC = P$
   c. average variable costs equals price.
   d. total variable cost equals total revenue.
   e. both (c) and (d).

3. When total utility is maximum, we know that $TU\ max \rightarrow MU = 0$
   a. average utility is also maximum.
   b. marginal utility is also maximum.
   c. average utility is zero.
   d. marginal utility is zero
   e. marginal utility equals average utility.

4. As the marginal product of a variable input increases, the marginal cost $MP \uparrow \ MC$
   a. also increases.
   b. remains constant.
   c. decreases.
   d. equals average product.
   e. none of the above.

   $MC = \frac{w}{MP}$ $MC = \frac{w}{MP}$

5. If a purely competitive firm in the short run can sell its output at \$2.50 per unit, and it has an average variable cost of \$1.75 per unit and a marginal cost of \$1.50 per unit, it should:
   a. shut down. ✗
   b. increase its price.
   c. decrease its price.
   d. decrease its output.
   e. increase its output. ✓

   $P = \$2.5$ $AVC = 1.75$ $MC = 1.5$

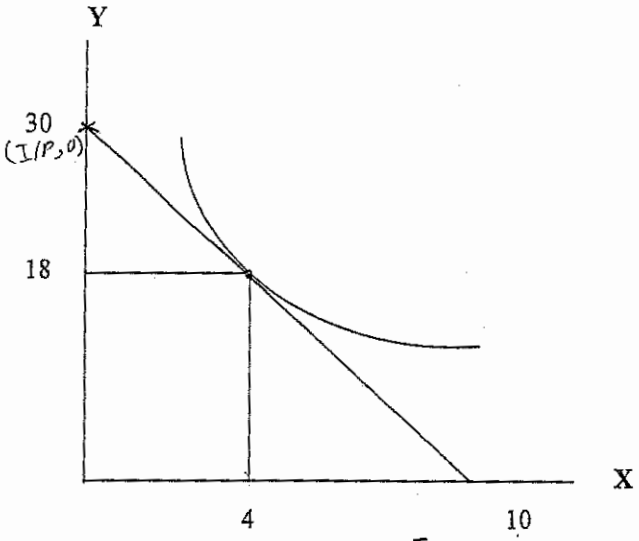
   $AVC = 1.75$ $MC = 1.5$

   P, AVC
   $P > AVC$
   $2.5 > 1.75 \rightarrow$ produce

   $P \geq AVC$

   P, MC
   $P > MC$
   $2.5 > 1.5 \rightarrow$ increase production

The following **two questions** are based on the following budget line and indifference curve for a consumer who spends all his income on two goods: X and Y.



6. The equilibrium combination for this consumer is
   a. 4 units of X and 18 units of Y.
   b. 4 units of X and 30 units of Y.
   c. 10 units of X and 18 units of Y.
   d. 10 units of X and 30 units of Y.
   e. either 10 units of X **or** 30 units of Y.

7. If the price of Y is \$3 per unit, then the price of X is
   a. \$3.
   b. \$1.
   c. \$9.
   d. \$6.
   e. None of the above.

$P_y = 3$ $\quad P_x = ??$ $\quad \frac{I}{P_y} = Q_y$ $\quad \frac{I}{3} = 30 \rightarrow I = 90$ $\quad Q_x = \frac{I}{P_x}$ $\quad 10 = \frac{90}{P_x} \rightarrow P_x = \frac{90}{10}$

8. The law of diminishing marginal returns says that
   a. If all inputs are increased, output will decrease
   b. If all inputs are increased, marginal product will decrease
   c. If all input are increased, both output and marginal product will decrease.
   d. If one input is increased while other inputs are fixed, marginal product will decrease.
   e. If one input is increased while other inputs are fixed, output will decrease

9. A pure competitive firm faces (تواجه) a demand curve that is
   a. vertical.
   b. horizontal.
   c. downward-sloping.
   d. upward-sloping.
   e. equal to the total costs of production for each level of output.

10. In the long run,
    a. all inputs are variable
    b. all inputs are fixed
    c. only the scale of plant (plant capacity) is fixed
    d. average variable cost is less than average total cost.
    e. firms cannot enter or exit the market.

11. If two points are on the same indifference curve,
    a. they are also on the same budget line.
    b. they represent combinations which give the consumer the same level of satisfaction.
    c. they represent combinations which cost the consumer the same amount of money.
    d. they represent combinations which maximize the consumer's utility
    e. they represent combinations where the marginal utility per dollar is equal.

12. Diamonds (الالماس) are more expensive (أغلى) than water because
    a. more diamonds are demanded.
    b. households are irrational.
    c. diamonds are more useful.
    d. diamonds give higher total utility.
    e. diamonds give higher marginal utility.

13. Suppose than a consumer spends her income on books and movies. The marginal utility of books is 50, and the marginal utility of movies is 100. The price of books is $10 and the price of movies is $5. In order to maximize total utility, she should:
    a. consume more movies and less books.
    b. consume more books and less movies.
    c. consume more books and more movies as long as their marginal utilities are positive.
    d. consume less books and less movies until their marginal utilities are equal.
    e. Keep consuming the same quantities of books and movies since this is the equilibrium combination.

$MU(b) = 50$ $P(b) = 10$
$MU(m) = 100$ $P(M) = 5$
$\frac{MU}{P} = \frac{50}{10} = 5$ (books)
$\frac{100}{5} = 20$ movie

14. A competitive firm's supply curve in the short run is:
    a. the entire (جميع، كل) marginal cost curve.
    b. the entire average variable cost curve.
    c. the entire average total cost curve.
    d. the average variable cost curve above the marginal cost curve.
    e. the marginal cost curve above the average variable cost curve.

15. Economics of scale implies (تعني) that:
    a. short run total cost increase as output increase.
    b. short run average cost decrease as output increase.
    c. long run marginal cost decreases as output increases.
    d. long run average cost decreases as output increases.
    e. none of the above.

16. Suppose the average product of labor is 5 when the firm hires 3 workers. If the average product falls from 5 to 4.5 when the firm hires the fourth worker, then the marginal product of this fourth worker is:
    a. 27.0
    b. 9.5
    c. 4.5
    d. 3.0
    e. 0.5

$AP = 5$ $L = 3$
$AP = 4.5$ $L = 4$
$AP = \frac{TP}{L}$

L	AP	MP	TP
3	5		15
4	4.5	3	18

$MP = \frac{\Delta TP}{\Delta L}$

$TP = (AP)(L)$
$= (4.5)(4) = 18$

$TP = (5)(3) = 15$

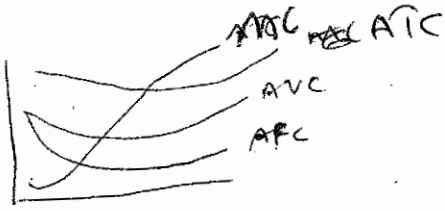
$MP = \frac{18 - 15}{1} =$

17. Generally speaking, as more of a good is consumed by an individual consumer,
    a. marginal utility would increase and total utility would decrease.
    b. marginal utility would decrease and total utility would increase.
    c. marginal utility would increase but total utility would remain unchanged.
    d. both marginal utility and total utility would decrease.
    e. both marginal utility and total utility would increase.

MU ↓, TU ↑

18. When marginal product is higher than average product, then
    a. marginal product must be negative.
    b. total product is decreasing.
    c. average product is at its maximum.
    d. average product is decreasing.
    e. average product is increasing.

$MP > AP \rightarrow AP$ ↑



MU book = 50
MU movie = 100
price of book = $10
Price of movies is = $5

Long Run

Economic of scale

PART II: Essay Questions (46 Points)

Answer the following questions in the space provided. **SHOW YOUR WORK WHEN NECESSARY!**

1 (10 points)

Consider the following table which represents the utility that a consumer derives from consuming various quantities of falafel sandwiches (سندوتشات فلافل). Assume that the **price of falafel sandwich is $5**:

$P = \$5$

Q	TU	MU	MU per dollar
1	15	15	3
2	40	25	5
3	60	20	4
4	70	10	2
5	70	0	0
6	65	-5	-1

$MU = \frac{\Delta TU}{\Delta Q}$; $25 = \frac{TU - 15}{2-1}$; $25 + 15 = TU$; $40 = TU$

$20 = TU - 40$; $TU = 20 + 40 = 60$; $MU = 70 - 60 = 10$

$MU = 65 - 70 = -5$

$\frac{MU}{P} = \frac{15}{5} = 3$ ← MU per dollar

$\frac{MU}{P} = MU \text{ per dollar}$; $\frac{MU}{5} = 4$; $MU = 20$

a) Fill in the blanks in the above table.

b) Suppose now that the consumer can get as much falafel sandwiches as he wants free (يمكنه الحصول على ما يشاء مجانا), how many sandwiches should he consume to maximize total utility? Why?

5 units because the $MU > 0$ (from 1 units to 5 units)(1-5) $\Rightarrow$ ($MU > 0$) $TU \uparrow$ (5 $TU_{max} \rightarrow MU = 0$)

but if he consume the 6th units (وإذا تناول السندوتش السادس) $\Rightarrow$ the $MU < 0$ negative $\rightarrow TU \downarrow$

(هنا السندوتش سوف يضره)

2 (20 points)

Consider the following short-run cost schedules for a purely competitive firm. Suppose the market **price is $20** per unit.

$P = MR = 20$

$FC = 12$

Quantity	Total Cost	ATC	AVC	MC	profit
0	$12	X	X	X	0 - 12
1	17	17	5	5	3
2	20	10	4	3	20
3	36	12	8	16	24
4	60	15	12	24	20

$ATC = \frac{TC}{Q}$; $AVC = \frac{VC}{Q}$; $TC = FC + VC$; $17 = 12 + VC$; $VC = 5$

$P = 20$; $MC = \frac{\Delta TC}{\Delta Q} = \frac{\Delta VC}{\Delta Q}$

$\pi = Q(P - ATC)$; $= 1(20 - 17)$; $\pi = 2(20 - 10)$; $\pi = 3(20 - 12) =$; $\pi = 4(20 - 15) = 2$

$MR = MC$

a) Fill in the blanks in the above table

b) What is the equilibrium quantity for this firm? Why?

$P = MR = MC$

eq. $\rightarrow P = MC$

3 units $\rightarrow$ 1) because when we produce 3 units the $P > MC$ (20 > 16) but if we produce the 4th unit the $MC = 24$ $\rightarrow$ ($MC > P$) loss production and because of that we produce 3 unit and this is the eq. q. (more production)

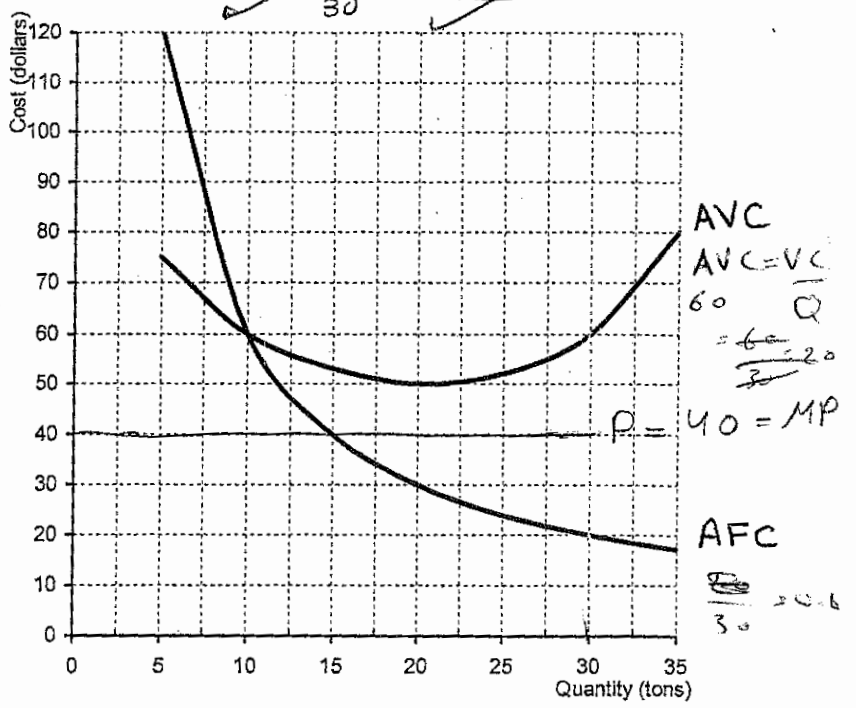
3 units $\rightarrow$ 2) $\pi = 24$ the max.

3 (16 points)

16

Consider the following graph which represents the average variable cost and average fixed cost curves:

Answer the next questions based on this graph:



a) Suppose the firm is producing 30 units of output, what is the average total cost (ATC) at this level of output?

$ATC = \frac{TC}{Q} = \frac{TC}{30}$

$Q=30 \rightarrow AVC = 60$

$60 = \frac{VC}{30} \rightarrow VC = 1800$

$Q=30 \rightarrow AFC = 20$

$\frac{FC}{Q} = 20 \rightarrow (20)(30) = FC$

$FC = 600$

$TC = FC + VC = 600 + 1800 = 2400$

$ATC = \frac{2400}{30} = 80$ ATC

b) Suppose the firm is producing 30 units of output, what is the total variable cost (TVC) at this level of output?

TVC = ??

$AVC = \frac{VC}{Q}$

$(60)(30) = VC$

$1800 = VC$

c) Suppose that these cost curves are for pure-competitive firm, and the market price is \$40, should the firm produce or shut down at this market price? Why?

P = MR

P = MR = AR = D

P = 40

AVC > P → shut down

because the AVC exceeds the P at all points (AVC curve above the P curve)

d) If the firm shuts down, ***HOW MUCH*** is the profit or loss in this case? Explain (Show your calculation).

the firm loss the fixed cost = 600

(Ext) FC = 600 ⟹ loss = 600 FC

AFC = 20 when the Q = 30

$\frac{FC}{Q} = 20 \rightarrow FC = 600$

The firm should loss the fixed cost when shut down. = 600

Student Name: Zahra Abinfarha

Student No.: 1050614

Section No.: 3

Second Midterm

97

Economics 131
First Semester 2006/2007

Dr. Mohamed Nasr
Dr. Said Haifa
Mr. Mohammad Amriya

51

Answer Part I (the multiple-choice questions) here. أجب على أسئلة الجزء الأول على هذه الورقة

ضع إشارة (X) على الحرف الذي يمثل الإجابة المناسبة، كما في المثال التالي:

Put mark (X) on the letter that corresponds to the best answer as in the following example:

Q.	(a)	(b)	(c)	(d)	(e)
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)

PART I: Multiple-choice questions (54 points)

Answer the following multiple-choice questions on the attached answer sheet: أجب على أسئلة هذا الجزء على ورقة الإجابة المرفقة

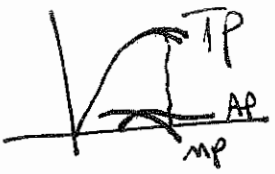
1. In economics, the short run refers to a time period
   a. of one year or less.
   b. in which all inputs are variable.
   c. in which all inputs are fixed.
   d. in which there is at least one fixed input and at least one variable input.
   e. in which output is fixed.

2. When marginal utility is zero,
   a. total utility will also be zero.
   b. total utility will be maximum.
   c. total utility will be minimum.
   d. total utility will be equal to marginal utility.
   e. none of the above is true.

3. If a firm is currently (حاليا) producing zero output, total cost equals
   a. zero
   b. average variable costs.
   c. marginal costs.
   d. total variable cost.
   e. total fixed cost

4. As a consumer consumes less of a commodity, his
   a. marginal utility will rise
   b. marginal utility will fall
   c. total utility will rise
   d. both total utility and marginal utility will fall
   e. both total utility and marginal utility will rise

5. When marginal product is higher than average product, then
   a. total product is decreasing.
   b. marginal product must be negative.
   c. average product is increasing.
   d. average product is decreasing.
   e. average product is at its maximum.



6. Which of the following curves cannot be U-shaped (i.e. go down first, then go up)
   a. AVC curve.
   b. AFC curve.
   c. ATC curve.
   d. MC curve.
   e. none of the above, since all above curves must be U-shaped.

7. Diamonds (اللآلئ) are more expensive (أغلى) than water because:
   a. diamonds are more useful.
   b. water is an inferior good.
   c. households are not rational.
   d. diamonds give higher total utility.
   e. diamonds give higher marginal utility.

8. The law of diminishing marginal returns means that, as you increase the variable input,
   a. total output will fall.
   b. marginal cost will fall.
   c. demand will fall.
   d. marginal product will fall.
   a. marginal revenue will fall.

9. The consumer maximizes his utility:
   a. when his budget line is horizontal (أفقي).
   b. When his indifference curves are apward sloping.
   c. where the indifference curve is tangent (مماس) to his budget line.
   d. where his indifference curves intersects (يتقاطع) his budget line.
   e. when his marginal utility equals the price of the good.

10. The production function of a firm shows the
   a. amount of goods produced per year.
   b. type of resources required to produce goods.
   c. relationship between labor and capital.
   d. relationship between explicit costs and implicit costs.
   e. relationship between inputs and output.

11. As the marginal product of a variable factor increases, the marginal cost
   a. also increases
   b. decreases
   c. remains constant
   d. equals the marginal product
   e. none of the above is true

12. Which of the following statements is **NOT correct** about indifference curves?
   a. Indifference curves do no intersect (يتقاطعوا).
   b. Indifference curves are convex (محدبة) to the origin.
   c. Higher indifference curves represent (تمثل) higher level of satisfaction
   d. Indifference curves assume that utility can be measured (يمكن قياسها) in utils.
   e. Indifference curves are downward-sloping.

13. Changes in consumption that results from changes in purchasing power (القوة الشرائية) due to changes in price is called
   a. Income effect
   b. Substitution effect
   c. Consumption effect
   d. Law of demand
   e. Law of supply

14. If a firm has total revenue of $100,000, implicit costs of $20,000, and explicit costs of $90,000, then
   a. economic profit is $10,000.
   b. normal profit is $10,000.
   c. economic loss is $10,000.
   d. accounting cost is $20,000.
   e. none of the above

15. In the long run, if average cost increases as output increases, this indicates (يشير إلى) that there are
   a. economies of scale
   b. diseconomies of scale
   c. diminishing marginal returns
   d. diminishing marginal returns
   e. diminishing marginal utility

16. If the total cost of producing 6 units is $48 and the marginal cost of producing the seventh unit is $15, then
a. the average variable cost of 7 units is $15
b. the total variable cost is $15
c. the average fixed cost of 7 units is $9
d. the total fixed cost is $48
e. the average total cost of 7 units is $9

17. A curve which represents all combinations that give the consumer same level of satisfaction is called
a. The demand curve
b. The satisfaction curve
c. The budget line
d. The indifference curve
e. The utility curve

18. In the short run, as the level of output increases, then
a. the total variable cost increases.
b. the average fixed cost increases.
c. the total fixed cost decreases.
d. the total fixed cost increases.
e. the total variable cost decreases.

PART II: Essay Questions (46 Points)

Answer the following questions in the space provided. **SHOW YOUR WORK WHEN NECESSARY!**

1 (20 points)

Suppose that Salwa gets utility from consuming pizza and juice according to the following table.

TU Pizza	Number of Pizzas	MU of Pizza	MU per dollar spent on Pizza	Cups of Juice	MU of Juice	MU per dollar spent on Juice	TU
30	1	30	15	1	27	9	27
50	2	20	10	2	24	8	51
68	3	18	9	3	21	7	72
84	4	16	8	4	18	6	90
96	5	12	6	5	12	4	102
104	6	8	4	6	3	1	105
106	7	2	1	7	0	0	105
106	8	0	0	8	-6	-2	99

Suppose that the price of pizza is $2 and the price of juice is $3.

a. Compute and fill in the above table the marginal utility per dollar spent on both pizza and juice for each level of consumption.

b. Suppose Salwa consumes 3 units of Pizza and 2 cups of Juice, how much is the total utility that Salwa gets from consuming these quantities? **Show your work.**

Total utility = Total utility of 3(P) + Total uti. of 2(C)

= 68 + 51 = 119

$MU = \frac{\Delta TU}{\Delta Q}$ until $MU \cdot \Delta Q$

c. Suppose Salwa has an income of $22 per week. How much pizza and juice will she consume? **Show your work.**

$\frac{MU_{Pizza}}{P_{Pizza}} = \frac{MU_{Juice}}{P_{Juice}} \Rightarrow I = P_p Q_p + P_c Q_c$ / $P_x = \$2$ $P_y = \$3$

$5X + 4Y = I \Rightarrow 5(2) + 4(3) = 22$ that's it

$I = 22$

She will consume 5 units of pizza and 4 cups of juice

d. Suppose that Salwa's income has increased to $27 per week, while the prices of pizza and juice remain unchanged. How much pizza and juice will she consume at this new income? **Show your work.**

$6X + 5Y = I \Rightarrow 6(2) + 5(3) = 27$

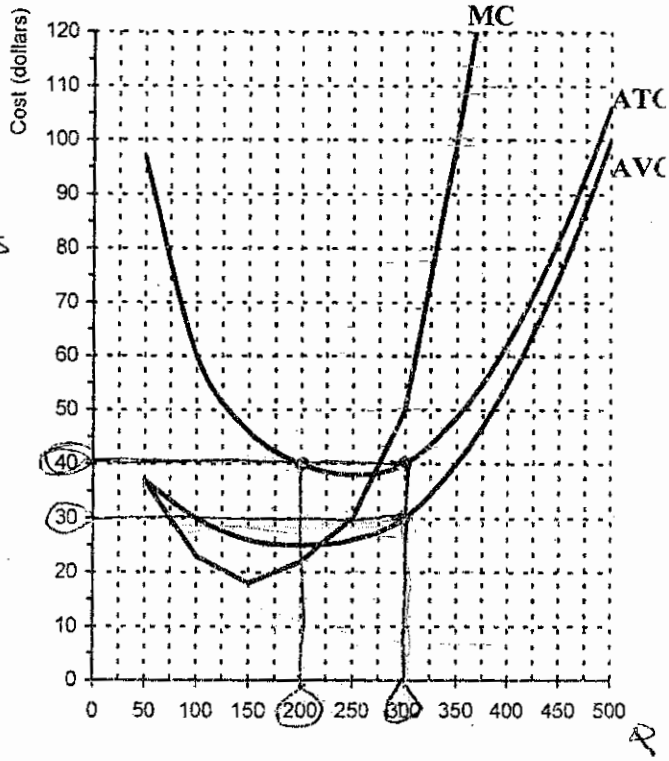
$I = 27$ so

She will consume 6 units of pizza & 5 cups of juice

2 (12 points)

12

Consider the following graph which represents average and marginal costs of a business firm. Use this graph to answer the following questions:
(SHOW YOUR WORK)



a. What is the total variable cost of producing 300 tons of output?

$ATVC = \frac{TVC}{Q}$ / (Q = 300) tons

AVC = 30 (dollars)

$TVC = AVC(Q)$

$= 30(300)$

TVC = 9000 $

b. What is the total cost of producing 200 tons of output?

$ATC = \frac{TC}{Q} \Rightarrow TC = ATC(Q)$

$TC = 40(200)$

TC = 8000 $

c. What is total fixed cost for this firm?

$TC = TVC + TFC$

$8000 = 9000 +$

$AFC = 10 \Rightarrow FC = AFC(Q)$

$10(300) = 3000$ $

TFC = 3000 $

$AFC = ATC - AVC$

$10 = 40 - 30$

$40 - 30 = 10$

$10 = AFC =$

$10(300) = 3000$ $

TFC

$AP = \frac{TP}{units}$

$ATC = AVC + AFC$

$AFC = \frac{FC}{Q}$

3 (14 points)

14

Fill in the blanks in the following table:

Units of Variable Input	Total Product (TP)	Average Product (AP)	Marginal Product (MP)	
2	36	18	30	30
3	60	20	24	24
4	72	18	12	12
5	80	16	8	8
6	84	14	4	4

$MP = \frac{\Delta TP}{\Delta L}$

$AP = \frac{TP}{L}$

$MP = \Delta TP$

$MC = \frac{\Delta TC}{\Delta Q}$

$MC = AP$

$\frac{36}{2} = 18$

$\frac{24}{2} = 12$

$\frac{8}{2} = 4$

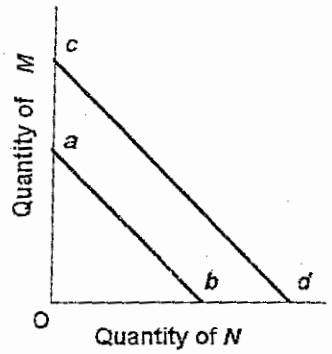
Birzeit University
Economics Department
Economics 131

Check Your Instructors Name:
Instructors: Dr. Riyad Musa (Coordinator) ( ) Dr. Said Haifa ( )
Ms. Shireen Al-Basha ( ) Dr. Awad Mataria ( )
Student Name:_____ Student Number:_____
Second Exam Second Semester 2007/2008

Place an X on the correct choice

1)	(A)	(B)	(C)	(D)
2)	(A)	(B)	(C)	(D)
3)	(A)	(B)	(C)	(D)
4)	(A)	(B)	(C)	(D)
5)	(A)	(B)	(C)	(D)
6)	(A)	(B)	(C)	(D)
7)	(A)	(B)	(C)	(D)
8)	(A)	(B)	(C)	(D)
9)	(A)	(B)	(C)	(D)
10)	(A)	(B)	(C)	(D)
11)	(A)	(B)	(C)	(D)
12)	(A)	(B)	(C)	(D)
13)	(A)	(B)	(C)	(D)
14)	(A)	(B)	(C)	(D)
15)	(A)	(B)	(C)	(D)
16)	(A)	(B)	(C)	(D)
17)	(A)	(B)	(C)	(D)
18)	(A)	(B)	(C)	(D)
19)	(A)	(B)	(C)	(D)
20)	(A)	(B)	(C)	(D)
21)	(A)	(B)	(C)	(D)
22)	(A)	(B)	(C)	(D)
23)	(A)	(B)	(C)	(D)
24)	(A)	(B)	(C)	(D)
25)	(A)	(B)	(C)	(D)
26)	(A)	(B)	(C)	(D)
27)	(A)	(B)	(C)	(D)

1.



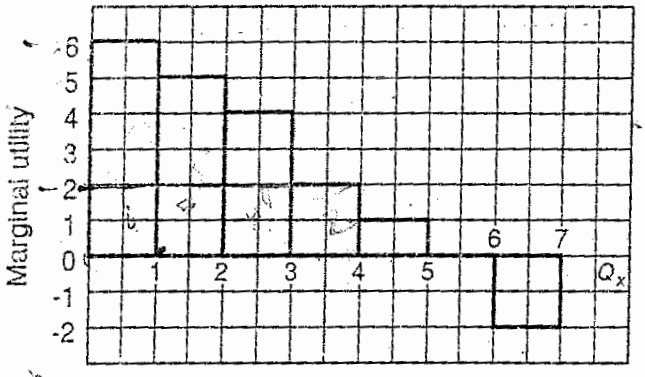
The shift of the budget line from *cd* to *ab* in the above figure is consistent with:

A) decreases in the prices of both M and N.
B) an increase in the price of M and a decrease in the price of N.
C) a decrease in money income.
D) an increase in money income.

2. The budget line shows:

A) all possible combinations of two goods that yield the same level of utility to the consumer.
B) the amount of product A that a consumer is willing to give up to obtain one more unit of product B.
C) all possible combinations of two goods that can be purchased, given money income and the prices of the goods.
D) all equilibrium points on an indifference map.

Use the following to answer question 3:



3. Refer to the above diagram. The total utility yielded by 4 units of X is:

A) 15.
B) 18.
C) 17.
D) 4.

4. The law of diminishing marginal utility states that:
   A) total utility is maximized when consumers obtain the same amount of utility per unit of each product consumed.
   B) beyond some point additional units of a product will yield less and less extra satisfaction to a consumer.
   C) it will take larger and larger amounts of resources beyond some point to produce successive units of a product.
   D) price must be lowered to induce firms to supply more of a product.

Use the following to answer question 5:

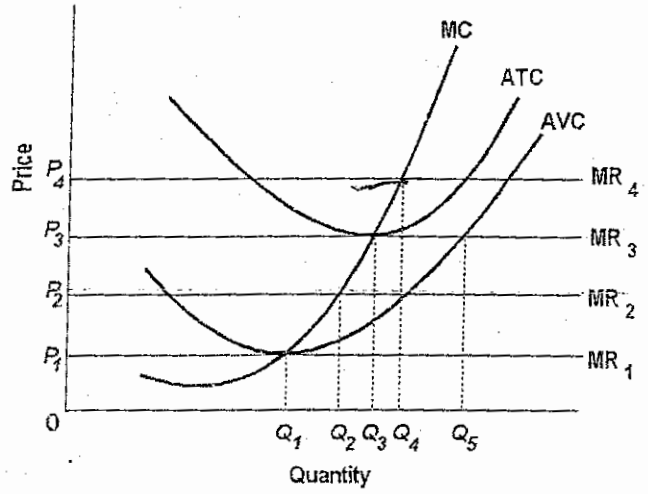
Answer the next question on the basis of the following cost data:

Output	Average fixed cost	Average variable cost	ATC	MC = ΔTC/ΔQ	AVC	TC	MC
1	$50.00	$100.00	150	150	100	150	150
2	25.00	80.00	105	60	80	210	60
3	16.67	66.67	83.34	46.02	66.67	250.02	40.02
4	12.50	65.00	77.5	59.98	65	310	59.98
5	10.00	68.00	78	80	68	390	80
6	8.37	73.33	81.7	100.2	73.33	490.2	100.2
7	7.14	80.00	87.14	119.98	80	609.98	119.98
8	6.25	87.50	93.75	140.02	87.5	750	140.02

5. Refer to the above data. The marginal cost curve would intersect (يقطع) the average variable cost curve at about:
   A) 6 units of output.
   B) 7 units of output.
   C) 2 units of output.
   D) 4 units of output.

6. To the economist total cost includes:
   A) neither implicit nor explicit costs.
   B) explicit and implicit costs, including a normal profit.
   C) explicit, but not implicit, costs.
   D) implicit, but not explicit, costs.

Use the following to answer question 7:



7. Refer to the above diagram. The firm will realize (تحقق) an economic profit if price is:
   A) P_4.
   B) P_1.
   C) P_3.
   D) P_2.

8. Which of the following is *not* correct?
   A) Marginal product becomes negative before average product becomes negative.
   B) Where total product is at a maximum, average product is also at a maximum.
   C) Where marginal product is zero, total product is at a maximum.
   D) Where marginal product is greater than average product, average product is rising.

9. Average fixed cost:
   A) declines continually as output increases.
   B) graphs as a U-shaped curve.
   C) may be found for any output by adding average variable cost and average total cost.
   D) equals marginal cost when average total cost is at its minimum.

10. The marginal utility of the last unit of A consumed is 12 and the marginal utility of the last unit of B consumed is 8. What set of prices for A and B respectively would be consistent with consumer equilibrium?
    A) \$4 and \$6.
    B) \$16 and \$9
    C) \$6 and \$4
    D) \$8 and \$12

11. Economies of scale are indicated by:
A) the rising segment of the average variable cost curve.
B) the declining segment of the long-run average total cost curve.
C) a rising marginal cost curve.
D) the difference between total revenue and total cost.

12. A purely competitive firm should produce in the short run if its total revenue is sufficient (كاف) to cover its:
A) marginal costs.
B) total fixed costs.
C) total costs.
D) total variable costs.

Use the following to answer question 13:

Answer the next question on the basis of the following information:

Number of workers	Total product	Marginal product
0	0	--
1	8	8
2	18	10
3	25	
4	30	
5		3
6	34	

13. Refer to the above data. When two workers are employed:
A) total product cannot be determined from the information given.
B) total product is 18.
C) total product is 20.
D) average product is 10.

14. The basic difference between the short run and the long run is that:
A) economies of scale may be present in the short run, but not in the long run.
B) the law of diminishing returns applies in the long run, but not in the short run.
C) at least one resource is fixed in the short run, while all resources are variable in the long run.
D) all costs are fixed in the short run, but all costs are variable in the long run.

15. If at the MC = MR output, AVC exceeds (يتجاوز) price:
A) the firm should expand its plant.
B) the firm should shut down in the short run.
C) the firm should produce the MC = MR output and realize an economic profit.
D) new firms will enter this industry.

16. On a per unit basis economic profit can be determined as the difference between:
A) average fixed cost and product price.
B) product price and average total cost.
C) marginal revenue and product price.
D) marginal revenue and marginal cost.

17. The marginal revenue curve of a purely competitive firm:
A) is downsloping because price must be reduced (يخفض) to sell more output.
B) lies below the firm's demand curve.
C) increases at an increasing rate as output expands.
D) is horizontal at the market price.

Use the following to answer question 18:

Answer the next question on the basis of the following cost data:

Output	Total cost
0	$24
1	33
2	41
3	48
4	54
5	61
6	69

18. Refer to the above data. The average variable cost of producing 3 units of output is:
A) $14.
B) $12.
C) $16.
D) $8.

19. Marginal cost is the:
A) change in average total cost that results from producing one more unit of output.
B) change in average variable cost that results from producing one more unit of output.
C) rate of change in total fixed cost that results from producing one more unit of output.
D) change in total cost that results from producing one more unit of output.

20. A consumer's demand curve for a product is downsloping because:
A) the income and substitution effects precisely offset each other.
B) total utility falls below marginal utility as more of a product is consumed.
C) marginal utility diminishes as more of a product is consumed.
D) time becomes less valuable as more of a product is consumed.

21. An indifference curve:
A) is downsloping and convex to the origin.
B) is downsloping and concave to the origin.
C) may be either upsloping or downsloping, depending on whether the two products are complements or substitutes.
D) is upsloping and has a constant slope.

22. Which of the following statements is *correct*?
A) If an individual's marginal utility from a product diminishes rapidly, her demand for this product is elastic with respect to price.
B) There is no relationship between how rapidly marginal utility declines and the price elasticity of demand.
C) If an individual's marginal utility from a product diminishes rapidly, her demand for this product is inelastic with respect to price.
D) If marginal utility is diminishing, total utility must also be diminishing.

Use the following to answer question 23:

Answer the next question on the basis of the accompanying table which shows average total costs (ATC) for a manufacturing firm whose total fixed costs are $10:

Output	ATC
1	$40
2	27
3	29
4	31
5	38

23. Refer to the above data. The marginal cost of the fourth unit of output is:
A) $37.
B) $16.
C) $2.
D) $12.

24. A purely competitive firm's short-run supply curve is:
A) the upward sloping portion(جزء) of its average variable cost curve.
B) its marginal cost curve above average variable cost.
C) its average total cost curve.
D) the upward sloping portion of its marginal cost curve.

25. The MR = MC rule can be restated for a purely competitive seller as P = MC because:
A) the firm's average revenue curve is downsloping.
B) the market demand curve is downsloping.
C) the firm's marginal revenue and total revenue curves will coincide (يتطابق).
D) each additional unit of output adds exactly its price to total revenue.

26. If a purely competitive firm shuts down in the short run:
A) it will realize a loss equal to its total costs.
B) it will realize a loss equal to its total variable costs.
C) its loss will be zero.
D) it will realize a loss equal to its total fixed costs.

27. The law of diminishing returns indicates (يؤشر) that:
A) beyond some point the extra utility derived from additional units of a product will yield (يعطي) the consumer smaller and smaller extra amounts of satisfaction.
B) the demand for goods produced by purely competitive industries is downsloping.
C) because of economies and diseconomies of scale a competitive firm's long-run average total cost curve will be U-shaped.
D) as extra units of a variable resource are added to a fixed resource, marginal product will decline (ينخفض) beyond some point.

Part Two:

Q.1. Answer the next question on the basis of the following two schedules which show the amounts of additional satisfaction (marginal utility) which a consumer would get from successive quantities of products J and K.

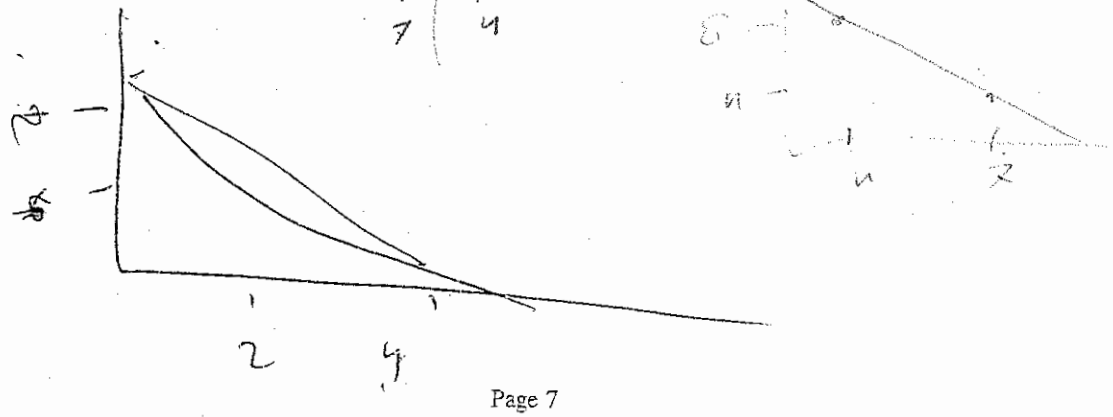
Units Of J	MU_j	Units Of K	MU_k
1	56	1	32
2	48	2	28
3	32	3	24
4	24	4	20
5	20	5	12
6	16	6	10
7	10	7	8

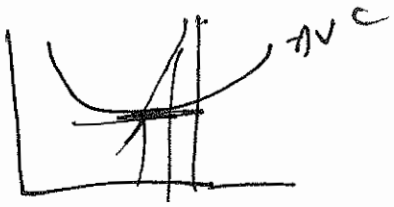
a- if the consumer has a money income of $52 and the prices of J and K are $8 and $4 respectively, how many units of J and K should be purchased to maximize utility? (12 pts)

4J , 5K

b- Assume that the price of J falls to $4, how many units of J and K should now be purchased. (5 pts)

c- Derive a demand schedule and draw a demand curve for product J. (5 pts)





Q.2. Assume that a purely competitive firm has the schedule of average and marginal costs given in the table below.

Output	AFC	AVC	ATC	MC
0				
1	$600	$200	$800	$200
2	300	150	450	100
3	200	140	340	120
4	150	145	295	160
5	120	160	280	220
6	100	180	280	280
7	86	205	291	360
8	76	232	314	460
9	66	276	342	580
10	60	320	380	720

P = MC

P = MR, AR

MR = MC

a- In the table below, complete the supply schedule for the competitive firm and state what the economic profit will be at each price. (12 pts)

TR > TC

R

Price	Quantity supplied	Profits (+) Or loss (-)
$580	9	580(9) − 432(9)
460	8	
360	7	
280		
220		
160		
120		

R = P X → 9(580 − 432) =

b- If there are 100 firms in the industry and all have the same cost schedule, complete the market supply schedule in the table below. (5 pts)

Q x 100

Quantity demanded	Price	Quantity supplied
500	$580	
600	460	
700	360	
800	280	
90	220	
1000	160	
1000	120	

c- What are the equilibrium price and quantity? (5 pts)

Price: 360 Quantity: 700

Second

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

Second Hour Exam

Student Name: _____ Student No.: 1071904

Section No.: _____

Economics 131
First Semester 2008/2009

Dr. Mohamed Nasr
Dr. Said Haifa
Dr. Reyad Musa
Dr. Awad Mataria
Ms. Shireen Basha

PART I: **Multiple-choice questions (60 points).**
Circle the best answer for each of the following questions:

1. The production function of a firm shows the
   a. relationship between explicit costs and implicit costs.
   b. relationship between labor and capital.
   c. relationship between inputs and output.
   d. amount of goods produced per year.
   e. type of resources required to produce goods.

2. Generally, as consumption of a good decreases (بصفة عامة، كلما نقص استهلاك السلعة), then
   a. marginal utility will rise.
   b. marginal utility will fall.
   c. total utility will rise.
   d. both total utility and marginal utility will fall.
   e. both total utility and marginal utility will rise.

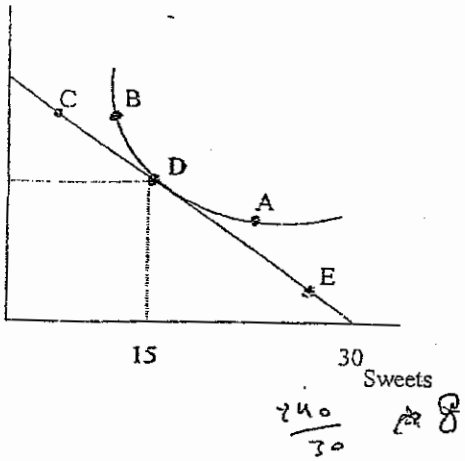
3. An example of an implicit cost for a business firm is
   a. the cost of raw materials.
   b. wages of labor.
   c. labor services provided by the firm's owner.
   d. electric utility expense.
   e. marketing costs.

4. The law of diminishing marginal returns means that as you increase the number of units of a variable input, after some point:
   a. total output will fall.
   b. costs of production will fall.
   c. demand will fall.
   d. marginal product will fall.
   e. marginal cost will fall.

5. "If the price of a product falls, that product becomes cheaper and people will want to purchase more of it in place of other goods." This statement best describes
   a. the income effect.
   b. the substitution effect.
   c. the budget line.
   d. the water-diamond paradox.
   e. the law of diminishing marginal utility.

6. If the price of a drink is $2, the price of a hamburger is $6, Jamal's utility maximizing combination of drinks and hamburgers per day is
   a. one drink and two hamburgers.
   b. one drink and three hamburgers.
   c. three drinks and one hamburgers.
   d. six drinks and two hamburger.
   e. indeterminate (لا يمكن تحديدها) from this information.

** Answer the next three questions on the basis of the following indifference curve and budget line for a given consumer



7. If consumer income is $240, then
   a. the price of sweets must be $8.
   b. the price of sweets must be $16.
   c. the price of sweets must be $4.5.
   d. the price of sweets must be $2.25.
   e. the price of sweets must be $4.

8. In equilibrium, the consumer will
   a. purchase 30 units of sweets **or** 60 units of cheese.
   b. purchase 30 units of sweets **and** 60 units of cheese.
   c. purchase 15 units of sweets **or** 30 units of cheese.
   d. purchase 15 units of sweets **and** 30 units of cheese.
   e. none of the above is true.

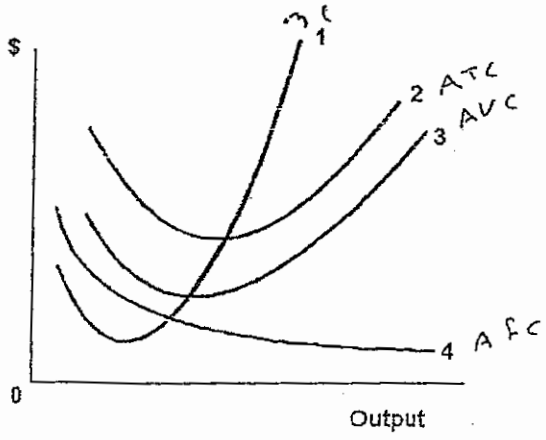
9. Which of the following statements is correct?
   a. Combinations C, D and E give the consumer same utility.
   b. Combinations A, D and B give the consumer same level of satisfaction.
   c. For this consumer, combination B is preferred to combination A.
   d. Combinations B and D cost the same amount of money.
   e. none of the above is true.

10. Economies of scale is a situation where:
   a. Long-run average cost falls as output increases.
   b. Long-run average cost rises as output increases.
   c. Long-run marginal cost falls as output increases.
   d. Long-run marginal cost rises as output increases.
   e. Long-run total cost falls as output increases.

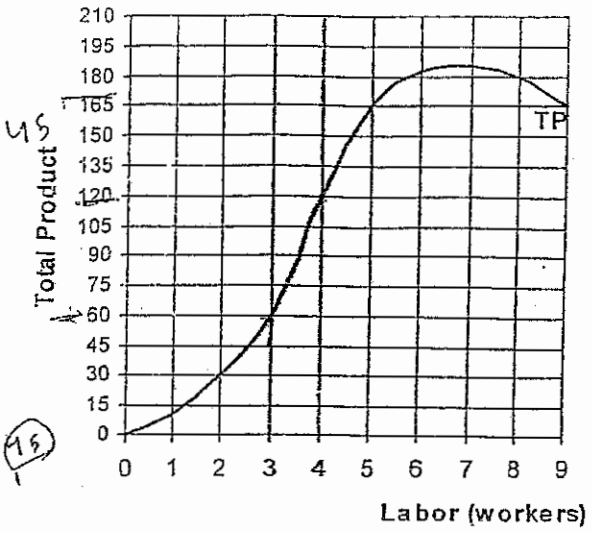
11. A fixed input is
   a. an input whose quantity can be changed in both the short run and the long run.
   b. an input whose quantity can be changed in the short run but not in the long run.
   c. an input whose quantity can be changed in the long run but not in the short run.
   d. an input whose quantity CANNOT be changed in the short run nor in the long run.
   e. an input whose price is fixed.

12. If someone complains (يتذمر) that he/she doesn't feel very well because he/she ate too much pizza, we would conclude (تستنتج) that the marginal utility of the last piece of pizza eaten was:
   a. equal to average utility.
   b. positive.
   c. zero.
   d. very large.
   e. negative.

13. In the following figure, curves 1, 2, 3, and 4 represent the:
   a. ATC, MC, AFC, and AVC curves respectively.
   b. ATC, AVC, AFC, and MC curves respectively.
   c. AFC, MC, AVC, and ATC curves respectively.
   d. MC, ATC, AVC, and AFC curves respectively.
   e. MC, AFC, AVC, and ATC curves respectively.



*** Consider the following graph which represents total product curve for a business firm. Assume that labor is the only variable input and the wage rate is $60 per worker per week. Use this graph and information to answer the next three questions.



14. Assume the firm employs 3 workers, what is the average product at this level of employment?
   a. 15
   b. 20
   c. 30
   d. 60
   e. None of the above

15. What is the marginal product of the 5th worker?
   a. 120
   b. 165
   c. 45
   d. 35
   e. 30

16. Suppose the firm produces 60 units of output, what is the average variable cost at this level of output?
   a. 20
   b. 30
   c. 1
   d. 2
   e. 3

17. If the marginal product is greater than the average product, then
   a. average product must be decreasing.
   b. average product must be increasing.
   c. marginal product must be decreasing.
   d. marginal product must be increasing.
   e. both (b) and (c) are correct.

18. In the short run:
   a. a firm cannot increase its output
   b. a firm can change all of its inputs
   c. total fixed cost is always higher than total variable cost
   d. average total cost is always higher than average variable cost
   e. all of the firm's inputs are fixed

19. When total utility is a maximum, marginal utility is:
   a. a minimum.
   b. a maximum.
   c. positive.
   d. negative.
   e. zero.

20. If the total cost of producing 6 units is $48 and the marginal cost of producing the seventh unit is $15, then
   a. the average total cost of 7 units is $9
   b. the average variable cost of 7 units is $15
   c. the total variable cost is $15
   d. the average fixed cost of 7 units is $9
   e. the total fixed cost is $48

2 (20 points)

Assume that Ramallah Industrial Co. produces special machines. Assume that labor is the only variable input and the firm pays its workers $20 per worker per day. The following table represents its cost schedule:

Quantity	Total Costs
0	60
1	80
2	90
3	110
4	140
5	180
6	225
7	280

VC

0 — MC — 20 — 30 — 10 — 50 — 20 — 80 — 30 — 120 — 40 — 45 — 165 — 55 — 220

a. If the firm produces 3 machines, calculate the average fixed cost (AFC) at this level of output?

fix cost = 60 and output = 3

$\therefore AFC = \frac{60}{3} = 20$

b. If the firm produces 5 machines, calculate the average variable cost (AVC) at this level of output?

$AVC = \frac{TVC}{Q} = \frac{120}{5} = 24$

c. If the firm produces 4 machines, calculate the marginal cost (MC) of last machine?

$MC = \frac{\Delta TC}{\Delta Q} = \frac{140-110}{4-3} = \frac{30}{1} = 30$

d. How many workers does the firm need to produce 5 units of output per day?

5 unit $\therefore VC = 120$

$\frac{VC}{w} = L = \frac{120}{20} = 6$ workers

e. If the firm is producing 5 machines, what is the marginal product (MP) of labor at this level of output?

$MC = \frac{w}{MP}$

$\therefore 40 = \frac{120}{MP}$

$MP = \frac{120}{40} = 3$

If firm producing 5 machines

∴ we have 6 workers

6 worker × 20 = 120

$\therefore w = 120$

$MC = 40$

$MC = \frac{w}{MP} = MP = \frac{20}{40} = 0.5$

w = 20

MC = 40

5

Part II: **(40 points)** Answer each of the following questions in the space provided. SHOW YOUR WORK!

1 **(20 points)**

Consider a consumer whose income is $16 per day and he spends all his income on two goods: X and Y. The price of X is $2 and the price of Y is $3. The marginal utility derived from each good is as follows

Good X			Good Y		
Q	MU	MU per dollar	Q	MU	MU per dollar
1	24	12	1	30	10
2	22	11	2	24	8
3	20	10	3	21	7
4	18	9	4	18	6
5	16	8	5	12	4
6	12	6	6	6	2

a. Fill in the blanks for marginal utility per dollar for both X and Y in the above table.

b. If the consumer wants to maximize utility, how many units of X and Y should he buy? Explain?

x = 1 1 1 1 1 1

y = 1 1

The consumer will buy 5 unit of X and 2 unit of y

becaus in this point consumer spind all his money

and $\frac{mux}{P_x} = \frac{muy}{P_y} = \frac{16}{2} = \frac{24}{3} = 8$

c. If the price of Y decreased to $2, how many units of X and Y should the consumer buy to maximize his utility? Why?

x = 1 1 1 1

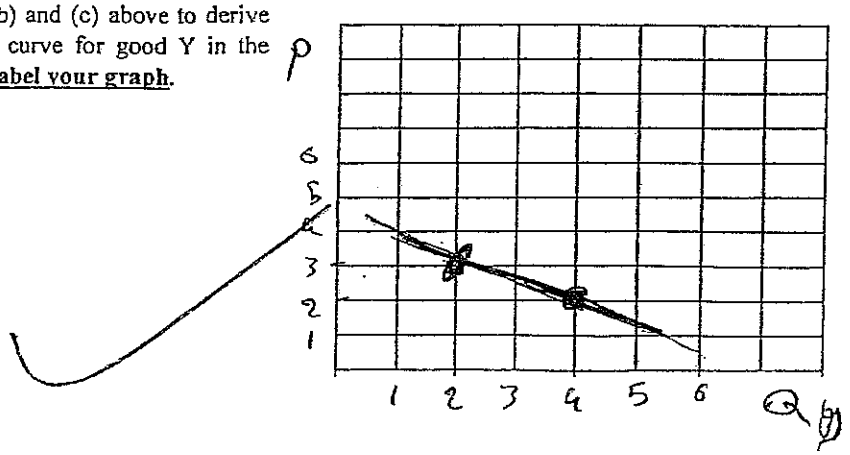
y = 1 1 1 1

The consumer will buy 4 unit of X and 4 of y

becaus $\frac{mux}{Px} = \frac{muy}{Py} = \frac{18}{2} = \frac{18}{2} = 9$ and in this point

the consumer spind all his money

d. Use your answers to (b) and (c) above to derive and draw the demand curve for good Y in the space provided here. **Label your graph.**



P	3	2
Q	2	4

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

Second Hour Exam

Student Name: _____ Student No.: 1071904

Section No.: _____

Economics 131
First Semester 2008/2009

Dr. Mohamed Nasr
Dr. Said Haifa
Dr. Reyad Musa
Dr. Awad Mataria
Ms. Shireen Basha

***PART I*: Multiple-choice questions (60 points).**
Circle the best answer for each of the following questions:

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   a. relationship between explicit costs and implicit costs.
   b. relationship between labor and capital.
   c. relationship between inputs and output.
   d. amount of goods produced per year.
   e. type of resources required to produce goods.

2. Generally, as consumption of a good decreases (بصفة عامة، كلما نقص استهلاك السلعة), then
   a. marginal utility will rise.
   b. marginal utility will fall.
   c. total utility will rise.
   d. both total utility and marginal utility will fall.
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   a. the cost of raw materials.
   b. wages of labor.
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4. The law of diminishing marginal returns means that as you increase the number of units of a variable input, after some point:
   a. total output will fall.
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   c. demand will fall.
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   e. marginal cost will fall.

5. "If the price of a product falls, that product becomes cheaper and people will want to purchase more of it in place of other goods." This statement best describes
   a. the income effect.
   b. the substitution effect.
   c. the budget line.
   d. the water-diamond paradox.
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6. If the price of a drink is $2, the price of a hamburger is $6, Jamal's utility maximizing combination of drinks and hamburgers per day is
   a. one drink and two hamburgers.
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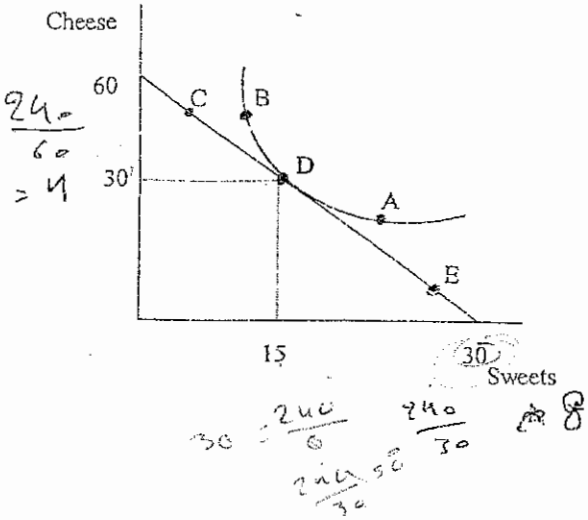
   d. six drinks and two hamburger.
   e. indeterminate (لا يمكن تحديدها) from this information.

** Answer the **next three questions** on the basis of the following indifference curve and budget line for a given consumer



7. If consumer income is $240, then
   a. the price of sweets must be $8.
   b. the price of sweets must be $16.
   c. the price of sweets must be $4.5.
   d. the price of sweets must be $2.25.
   e. the price of sweets must be $4.

8. In equilibrium, the consumer will
   a. purchase 30 units of sweets **or** 60 units of cheese.
   b. purchase 30 units of sweets **and** 60 units of cheese.
   c. purchase 15 units of sweets **or** 30 units of cheese.
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   e. none of the above is true.

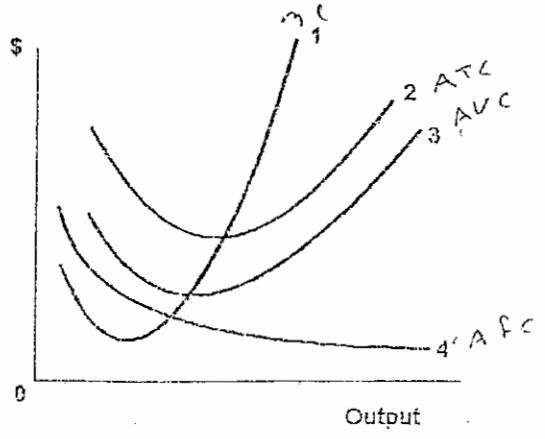
9. Which of the following statements is correct?
   a. Combinations C, D and E give the consumer same utility.
   b. Combinations A, D and B give the consumer same level of satisfaction.
   c. For this consumer, combination B is preferred to combination A.
   d. Combinations B and D cost the same amount of money.
   e. none of the above is true.

10. Economies of scale is a situation where:
   a. Long-run average cost falls as output increases.
   b. Long-run average cost rises as output increases.
   c. Long-run marginal cost falls as output increases.
   d. Long-run marginal cost rises as output increases.
   e. Long-run total cost falls as output increases.

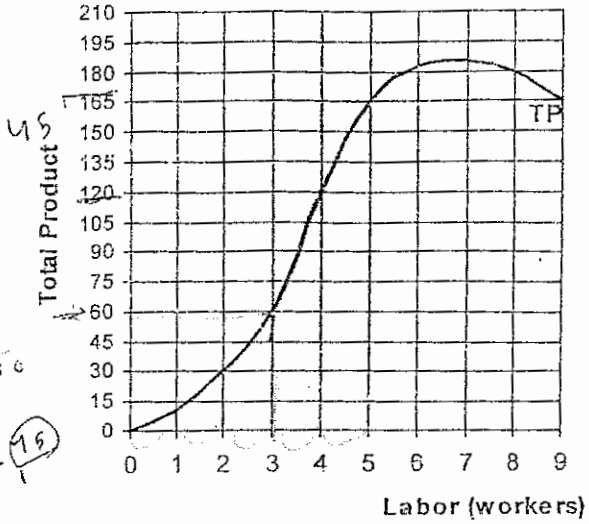
11. A fixed input is
   a. an input whose quantity can be changed in both the short run and the long run.
   b. an input whose quantity can be changed in the short run but not in the long run.
   c. an input whose quantity can be changed in the long run but not in the short run.
   d. an input whose quantity CANNOT be changed in the short run nor in the long run.
   e. an input whose price is fixed..

12. If someone complains (يتذمر) that he/she doesn't feel very well because he/she ate too much pizza, we would conclude (نستنتج) that the marginal utility of the last piece of pizza eaten was:
   a. equal to average utility.
   b. positive.
   c. zero.
   d. very large.
   e. negative.

13. In the following figure, curves 1, 2, 3, and 4 represent the:
   a. ATC, MC, AFC, and AVC curves respectively.
   b. ATC, AVC, AFC, and MC curves respectively.
   c. AFC, MC, AVC, and ATC curves respectively.
   d. MC, ATC, AVC, and AFC curves respectively.
   e. MC, AFC, AVC, and ATC curves respectively.



*** Consider the following graph which represents total product curve for a business firm. Assume that labor is the only variable input and the wage rate is $60 per worker per week. Use this graph and information to answer the next three questions.



14. Assume the firm employs 3 workers, what is the average product at this level of employment?
   a. 15
   b. 20
   c. 30
   d. 60
   e. None of the above

15. What is the marginal product of the 5th worker?
   a. 120
   b. 165
   c. 45
   d. 35
   e. 30

16. Suppose the firm produces 60 units of output, what is the average variable cost at this level of output?
   a. 20
   b. 30
   c. 1
   d. 2
   e. 3

17. If the marginal product is greater than the average product, then
   a. average product must be decreasing.
   b. average product must be increasing.
   c. marginal product must be decreasing.
   d. marginal product must be increasing.
   e. both (b) and (c) are correct.

18. In the short run:
   a. a firm cannot increase its output
   b. a firm can change all of its inputs
   c. total fixed cost is always higher than total variable cost
   d. average total cost is always higher than average variable cost
   e. all of the firm's inputs are fixed

19. When total utility is a maximum, marginal utility is:
   a. a minimum.
   b. a maximum.
   c. positive.
   d. negative.
   e. zero.

20. If the total cost of producing 6 units is $48 and the marginal cost of producing the seventh unit is $15, then
   a. the average total cost of 7 units is $9
   b. the average variable cost of 7 units is $15
   c. the total variable cost is $15
   d. the average fixed cost of 7 units is $9
   e. the total fixed cost is $48

Part II: (40 points) Answer each of the following questions in the space provided. SHOW YOUR WORK!

1 **(20 points)**

Consider a consumer whose income is $16 per day and he spends all his income on two goods: X and Y. The price of X is $2 and the price of Y is $3. The marginal utility derived from each good is as follows

Good X			Good Y		
Q	MU	MU per dollar	Q	MU	MU per dollar
1	24	12	1	30	10
2	22	11	2	24	8
3	20	10	3	21	7
4	18	9	4	18	6
5	16	8	5	12	4
6	12	6	6	6	2

a. Fill in the blanks for marginal utility per dollar for both X and Y in the above table.

b. If the consumer wants to maximize utility, how many units of X and Y should he buy? Explain?

x = 1 1 1 1

y = 1 1

The consumer will buy 3 unit of X and 2 unit of y becaus in this point consumer spind all his money and $\frac{mux}{P_x} = \frac{muy}{P_y} = \frac{16}{2} = \frac{24}{3} = 8$

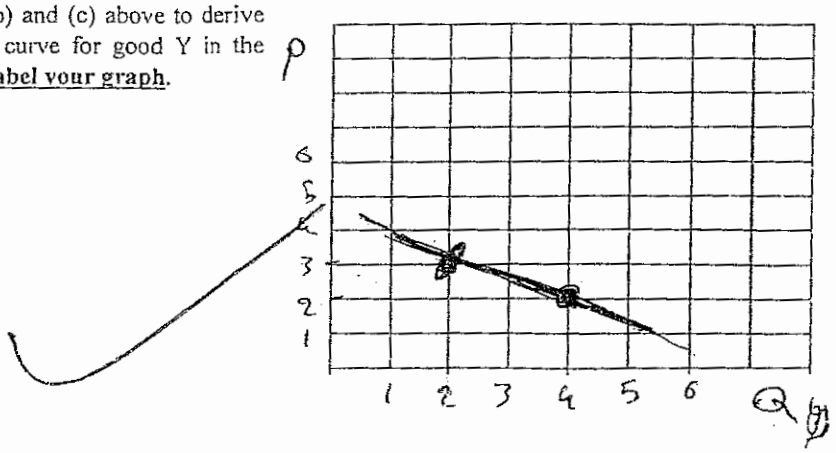
c. If the price of Y decreased to $2, how many units of X and Y should the consumer buy to maximize his utility? Why?

x = 1 1 1 1

y = 1 1 1 1

The consumer will buy 4 unit of X and 4 of y becaus $\frac{mux}{P_x} = \frac{muy}{P_y} = \frac{18}{2} = \frac{18}{2} = 9$ and in this point the consumer spind all his money

d. Use your answers to (b) and (c) above to derive and draw the demand curve for good Y in the space provided here. **Label your graph.**



P	3	2
Q	2	4

2 (20 points)

Assume that Ramallah Industrial Co. produces special machines. Assume that labor is the only variable input and the firm pays its workers $20 per worker per day. The following table represents its cost schedule:

Quantity	Total Costs
0	60
1	80
2	90
3	110
4	140
5	180
6	225
7	280

a. If the firm produces 3 machines, calculate the average fixed cost (AFC) at this level of output?

b. If the firm produces 5 machines, calculate the average variable cost (AVC) at this level of output?

c. If the firm produces 4 machines, calculate the marginal cost (MC) of last machine?

d. How many workers does the firm need to produce 5 units of output per day?

e. If the firm is producing 5 machines, what is the marginal product (MP) of labor at this level of output?

40

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

~~First~~ second Hour Exam

Fi'Hsem 2009/2010

Student Name: [redacted] Issa.

second

131

Student No.: [redacted]

Section No.: 1

Answer Part I (the multiple-choice questions) here. أجب على أسئلة الجزء الأول على هذه الورقة

Put mark (X) on the letter that corresponds to the best answer as in the following example:

ضع إشارة (X) على الحرف الذي يمثل الإجابة المناسبة، كما في المثال التالي:

Q.	(a)	(b)	(c)	(d)	(e)
			X		

30

Q.	(a)	(b)	(c)	(d)	(e)
1.	(a)	(b)	(c)	X	(e)
2.	(a)	X	(c)	X	(e)
3.	(a)	(b)	(c)	X	(e)
4.	(a)	X	(c)	(d)	X
5.	(a)	(b)	(c)	(d)	X
6.	X	(b)	(c)	(d)	X
7.	(a)	X	(c)	(d)	(e)
8.	(a)	(b)	(c)	(d)	X
9.	(a)	(b)	X	X	(e)
10.	(a)	(b)	(c)	(d)	X
11.	(a)	X	(c)	X	(e)
12.	X	(b)	X	(d)	(e)
13.	X	(b)	X	(d)	(e)
14.	X	(b)	(c)	X	(e)
15.	(a)	X	(c)	(d)	(e)
16.	(a)	(b)	(c)	X	(e)
17.	X	(b)	(c)	(d)	(e)
18.	(a)	(b)	(c)	X	(e)

19

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

second
First Hour Exam

Student Name: Nancy Issa Student No.: 1081231

Section No.: 1

Economics 131
Second Semester 2009/2010

Dr. Mohamed Nasr
Dr. Said Haifa
Miss Shireen Basha
Dr. Mohamed Abu Zaineh

***PART I*: Multiple-choice questions (54 points).**
Circle the best answer for each of the following questions:

1. A curve which represents all combinations that give the consumer same level of satisfaction is called
   a. the demand curve
   b. the satisfaction curve
   c. the budget line
   (d.) the indifference curve
   e. the utility curve

2. Marginal cost is the $MC = \frac{w}{MP}$ / $\frac{\Delta TC}{\Delta Q}$
   a. rate of change in total fixed cost that results from producing one more unit of output.
   b. change in total cost that results from producing one more unit of output.
   c. change in average variable cost that results from producing one more unit of output.
   (d.) change in average total cost that results from producing one more unit of output.
   e. change in total cost resulting from employing extra worker.

3. If a firm is not producing any output, total cost equals
   a. zero
   b. marginal cost
   c. variable cost
   (d.) fixed cost
   e. none of the above

4. Negative marginal utility implies that MU MU↓
   a. total utility is negative.
   b. total utility is diminishing.
   c. marginal utility is diminishing.
   d. Both (a) and (b) above
   e. all of the above

5. The consumer maximizes his utility MU = zero, TU
   a. when his marginal utility equals the price of the good.
   b. when his budget line is horizontal (أفقي) .
   c. where his indifference curves intersects (يقطع) his budget line.
   d. When his indifference curves are upward sloping.
   (e.) where the indifference curve is tangent (مماس) to his budget line.

6. The law of diminishing marginal returns says that MP ⇒
   (a.) as extra units of a variable resource are added to a fixed resource, marginal product will decline beyond some point .
   b. if all inputs are increased, output will decrease.
   c. because of economies and diseconomies of scale, a firm's long-run average total cost curve will be U-shaped.
   d. beyond some point, the extra utility derived (مشتقة) from additional units of a product will yield (تعطي) the consumer smaller and smaller extra amounts of satisfaction.
   (e.) If all input are increased, both output and marginal product will decrease.

7. When the average product of a variable factor increases, the average variable cost
   a. also increases
   b. decreases
   c. remains constant
   d. equals average product
   e. none of the above

8. Changes in consumption that results from changes in purchasing power (القوة الشرائية) due to changes in price is called
   a. law of demand
   b. law of supply
   c. consumption effect
   d. substitution effect
   e. income effect

9. If total product is increasing as the quantity of input used rises, marginal product
   a. must be zero
   b. must be negative
   c. may be positive
   d. must be rising
   e. must be falling

10. Suppose that the marginal utility of the last apple purchased was 10utils, and the marginal utility of the last orange purchased was 15 utils. The consumer should
   a. purchase more apples and fewer oranges.
   b. purchase more oranges and fewer apples.
   c. purchase more apples and more oranges since both goods have positive marginal utilities.
   d. purchase less apples and less oranges since both goods have positive marginal utilities.
   e. there is insufficient information (معلومات غير كافية) to determine how the consumer should adjust (يعدّل، يغيّر) his or her purchases.

11. Which of the following costs remain unchanged as the quantity of output increases
   a. average variable cost
   b. total variable cost
   c. average fixed cost
   d. total fixed cost
   e. both (c) and (d)

12. An increase in the price of product A will
   a. increase the marginal utility of product A.
   b. increase the marginal utility per dollar spent on A.
   c. decrease the marginal utility per dollar spent on A.
   d. not affect the marginal utility per dollar spent on A.
   e. cause utility-maximizing consumers to buy more of A.

13. When average product equals marginal produce,
   a. average product is maximum.
   b. marginal product is maximum
   c. total product is maximum.
   d. marginal cost is maximum
   e. marginal cost is minimum.

14. If the sixth unit of a good gives a consumer 12 units of utility, then the third unit would give him
   a. more than 12 units of utility
   b. less than 12 units of utility
   c. 6 units of utility
   d. 24 units of utility
   e. none of the above is correct.

15. To economists, the main difference between the short run and the long run is that
   a. the law of diminishing returns applies in the long run, but not in the short run.
   b. in the long run all resources are variable, while in the short run at least one resource is fixed.
   c. in the short run all resources are fixed, while in the long run all resources are variable.
   d. fixed costs are more important to decision making in the long run than they are in the short run.
   e. firms can increase their output in the long run, but not in the short run.

16. A consumer has $50 per week to spend on goods A and B. The price of these goods, the quantities he now buys, and his utility are

Good	Price Bought	Units	Total utility	Marginal utility
A	$ 2	20	2,500	15
B	$ 1	10	1,000	10

To increase his satisfaction, this consumer should:
   a. buy more of both good A and good B.
   b. buy less of both good A and good B.
   c. buy more of good A and less of good B.
   d. buy less of good A and more of good B.
   e. do nothing, since this combination gives him maximum satisfaction

17. To the economist, total cost includes (يشمل)
   a. explicit and implicit costs, including a normal profit.
   b. neither implicit nor explicit costs.
   c. implicit, but not explicit, costs.
   d. explicit, but not implicit, costs.
   e. accounting costs plus economic profits.

18. If the average product of labor falls from 5 to 4.5 when a sixth unit of labor is added (عند إضافة العامل السادس), the marginal product of this sixth worker is
   a. 27
   b. 9.5
   c. 4.5
   d. 2
   e. 0.5

PART II: **Essay questions (40 points)**

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

1 **(15 points)** 9

Consider the following table which represents the utility of a consumer

Q	TU	MU	MU per dollar
1	14	14	7
2	30	16	8
3	40	10	5
4	46	6	3
5	50	4	2
6	50	0	zero
7	48	-2	-1

a. Assume that the price of the product is $2 per unit, complete the above table.

b. When does the law of diminishing marginal utility sets in (يبدأ) for this product? Explain why.

after 6 units because Mu = zero when Tu is max and after the 6 units he will not satisfaction for consumer because it's become negative.

$MU = \frac{\Delta TU}{\Delta Q} \Rightarrow \frac{50-50}{6-5} = zero$

-4

c. If the consumer can get this product free (مجانا), how many units will he or she will consume? Explain why.

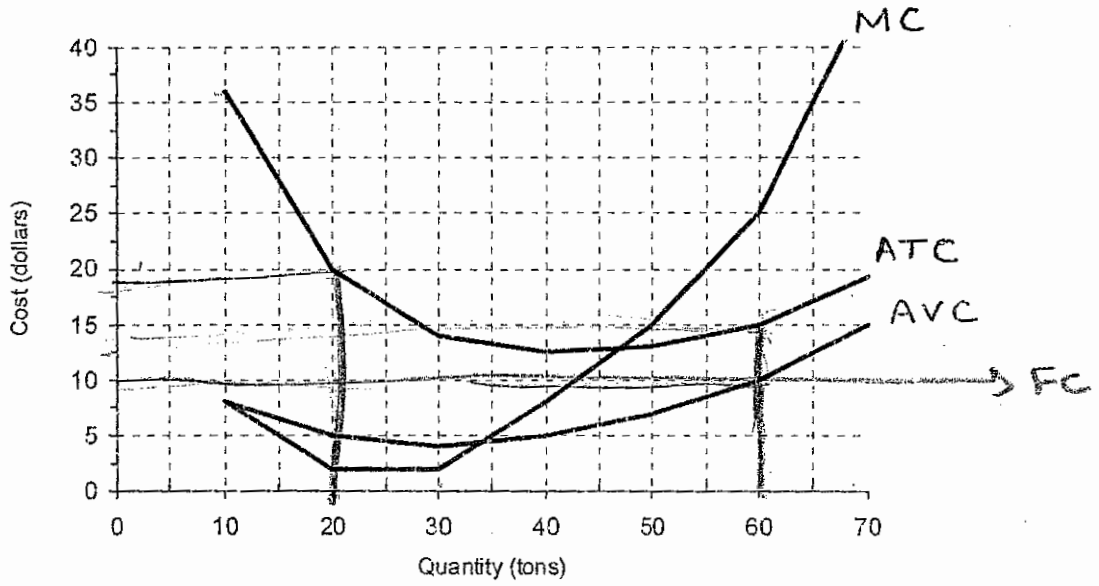
He will consume all of it even if he feel satisfaction because it's free but when he will eat the 7 unit his MU will decrease and Tu.

-2

So ? what is the answer

2 **(16 points)** 14

Consider the following graph which represents the cost curves for a business firm:



Answer the following questions on the basis of the above graph.

First, suppose that the firm is currently producing 60 units of output, calculate the following at this level of output:

a. Total Variable Cost (TVC)

$AVC = \frac{VC}{Q}$

$10 = \frac{VC}{60} \Rightarrow TVC \Rightarrow 600$ units

b. Average fixed cost (AFC)

$AFC = \frac{FC}{Q}$

$= \frac{15}{60} \Rightarrow$

$ATC = AFC + AVC$

$15 = \text{zero} + 10$

$AFC = 5$

Second, suppose that the firm is currently producing 20 units of output, calculate the following at this level of output:

a. Total Cost (TC)

$ATC = \frac{TC}{Q}$

$20 = \frac{TC}{20}$

$TC = 400$

b. Total fixed cost (TFC)

$AFC = \frac{FC}{Q}$

$15 = \frac{FC}{20} \Rightarrow TFC = 300$

$TC = TFC + TVC$ $FC = 10$

$ATC = AFC + AVC$

$AFC = ATC - AVC$

$= 6 - 600$

$AFC = \frac{FC}{Q}$ $AFC = \frac{fc}{Q}$

$20 = \frac{FC}{20}$

$FC = 400$

3 **(16 points)** (16)

Consider the following table:

Units of labor (workers)	Units of output (per month)	FC	VC
1	25	25	zero
2	60	25	35
3	90	25	65
4	112	25	87
5	130	25	105
6	145	25	120

a) What is the marginal product of the fourth worker?

$MP = \frac{\Delta TC}{\Delta Q}$

$MP = \frac{112 - 90}{4 - 3} \Rightarrow 22$

b) If the firm is currently employing 4 workers, what is the average product of labor?

$AP = \frac{TC}{Q} = \frac{112}{4} = 28$

c) If labor is the only variable input, and the wage rate is \$120 per month, what is the average variable cost when the firm produces 90 units of output?

$AVC = \frac{w}{AP} \Rightarrow \frac{120}{30} \Rightarrow 4$

$AP = \frac{TC}{Q} = \frac{90}{3} = 30$

d) Assuming, again, that wage rate is \$120 per month. What is the marginal cost of production when the firm increase output from 130 to 145 units of output?

$MC = \frac{w}{MP}$

$\Rightarrow MC = \frac{120}{15}$

$MC = 8$

$MP = 145 - 130$

$MP = 15$

91

Birzeit University
Economics Department
Economics 131

Check Your Instructors name

Instructors:
- Dr. Yousef Daoud ( )
- Dr. Mohammad Nasr (——)
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2nd Hour Exam

2nd Semester 2010/2011

54

Place an X on the correct choice

1)	(A)	**(B)**	(C)	(D)
2)	**(A)**	(B)	**(C)**	(D)
3)	(A)	(B)	**(C)**	(D)
4)	(A)	(B)	**(C)**	(D)
5)	**(A)**	(B)	**(C)**	(D)
6)	(A)	**(B)**	(C)	(D)
7)	(A)	(B)	(C)	**(D)**
8)	(A)	**(B)**	(C)	(D)
9)	(A)	(B)	(C)	**(D)**
10)	**(A)**	(B)	(C)	(D)
11)	(A)	(B)	(C)	**(D)**
12)	(A)	**(B)**	(C)	(D)
13)	(A)	(B)	(C)	**(D)**
14)	(A)	(B)	**(C)**	(D)
15)	(A)	(B)	**(C)**	(D)
16)	**(A)**	(B)	(C)	(D)
17)	(A)	(B)	(C)	**(D)**
18)	**(A)**	(B)	(C)	(D)
19)	(A)	**(B)**	(C)	(D)
20)	(A)	**(B)**	(C)	(D)

93

1. When a firm is experiencing (يحقق) economies of scale:
A. Minimum efficient scale has been achieved
B. Long-run average total cost is decreasing
C. An increase in long-run total cost is accompanied (يصاحب) by a less-than-proportionate (أقل نسبيا) increase in output
D. A given percentage increase in all resource inputs results in a less-than-proportionate increase in output

2. The reason the marginal cost curve eventually (أخيرا) increases as output increases for the typical firm is because:
MC ↑ Q ↑
A. Of diseconomies of scale
B. Of minimum efficient scale
C. Of the law of diminishing returns
D. Normal profit exceeds (يتجاوز) economic profit

3. A consumer makes purchases of a product X such that the marginal utility is 10 and the price is $5. The consumer also tries a new product Y and at the current (حالي) level of consumption it has a marginal utility of 8 and a price of $1. The utility-maximizing rule suggests that this consumer should:
$MU_x = 10$
$P = 5$
$MU = 8$
$P = 1$ $5 \rightarrow 10$ $1 \rightarrow 8$
A. Increase consumption of product X and decrease consumption of product Y
B. Increase consumption of product X and increase consumption of product Y
C. Increase consumption of product Y and decrease consumption of product X
D. Decrease consumption of product Y and decrease consumption of product X

4. A firm sells a product in a purely competitive market. The marginal cost of the product at the current output of 800 units is $3.50. The minimum possible average variable cost is $3.00. The market price of the product is $4.00. To maximize profit or minimize losses, the firm should:
MC = 3.50
MC , MR
400 > 3.50
A. Continue producing 800 units
B. Produce less than 800 units
C. Produce more than 800 units
D. Shut down

5. In pure competition, the demand for the product of a single firm is perfectly:
A. Elastic because the firm produces a unique فريد product
B. Inelastic because the firm produces a unique product
C. Elastic because many other firms produce the same product
D. Inelastic because many other firms produce the same product

6. Which Of the following statements is true :
A. Economic profit is larger than accounting profit
B. Economic profit is smaller than accounting profit
C. Economic profit equals accounting profit
D. Economic profit cannot be compared to accounting profit

7. If a firm is a price taker, the total revenue curve is :
A. Flat (horizontal line)
B. has an inverted (مقلوب) U shape
C. Downward sloping straight line
D. Upward sloping straight line starting at the origin

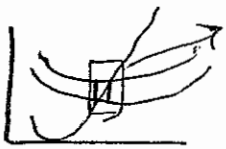
8. Which statement is correct?

A. Marginal cost is the change in ~~average~~ cost when there is a change in output of 1 unit

[B] The marginal cost curve cuts the average variable cost curve at its lowest point

C. In the long run view of the firm, all costs are fixed

D. If average variable cost is increasing, then average total cost must be increasing too



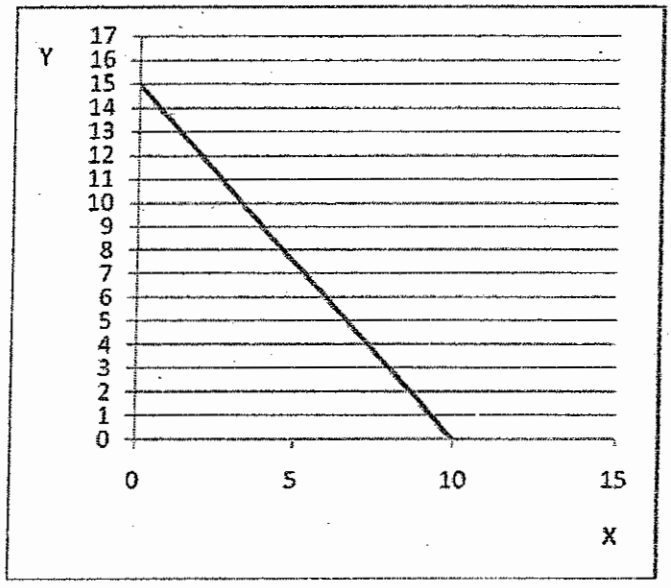
9. A firm increases the quantity of all resources it employs by 5 percent. As a result, output increases by 7 percent. This is an example of:

A. Minimum efficient scale

B. Diminishing marginal returns

C. Increasing long-run average costs

[D] Economies of scale



10. In the figure above, a consumer who spends her entire income on two goods X and Y, if the price of Y is \$2, then the consumers income is 30 and price of X is 3 :

[A] \$30 and \$3

B. \$3 and \$30

C. \$15 and \$10

D. \$10 and \$15

X	Y	
0	15	$y = 15 \times 2$
10	0	30

11. When average variable cost is at a minimum: MC > AVC

A. Marginal cost is at a maximum

B. The average product of labor is at a minimum

C. The marginal product of labor is at a minimum

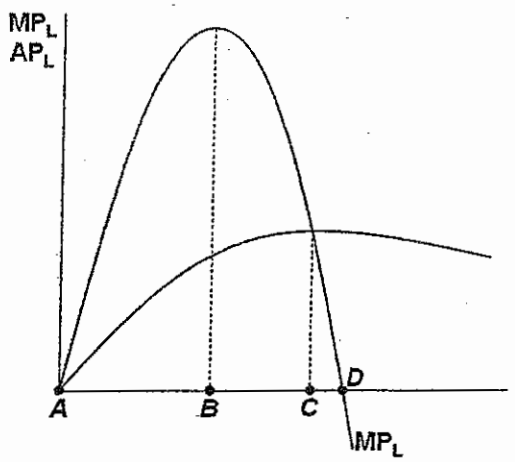
D. The average product of labor is at a maximum

0 AVC min

12. The profit-maximizing behavior for a price-taking firm requires it to operate at least where:
A. $P \neq TR = TC$
B. $P = MC = AVC$
C. $P = MC = AFC$
D. $P = MR = MC = AFC$

13. Laila is maximizing her satisfaction consuming two goods, A and B. If the marginal utility of A is twice that of B, what is the price of A if the price of B is \$.80?
A. \$.40
B. \$.80
C. \$1.20
D. \$1.60

14. The price of diamonds is substantially (بكثير) greater than the price of water because:
A. The total utility of water is greater than the total utility of diamonds
B. The total utility of diamonds is greater than the total utility of water
C. The marginal utility of the last unit of a diamond is significantly (بتميز) greater than the marginal utility of the last unit of a gallon of water
D. The marginal utility of the last unit of a diamond is significantly less than the marginal utility of the last unit of a gallon of water

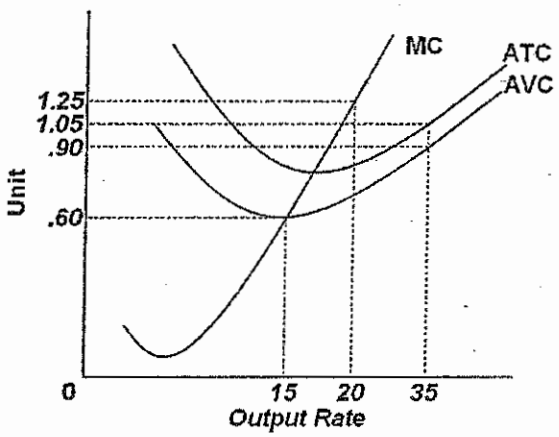


15. Refer to the above graph. It shows the marginal product of labor (MP_L) and the average product of labor (AP_L). At which point are marginal and average product the same as labor is added?
A. Point *A*
B. Point *B*
C. Point *C*
D. Point *D*

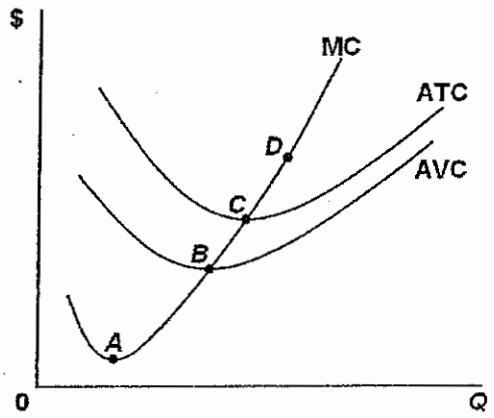
Output	Total Revenue	Total Cost
0	$0	$50
1	40	74
2	80	94
3	120	117
4	160	142
5	200	172

TR > TC

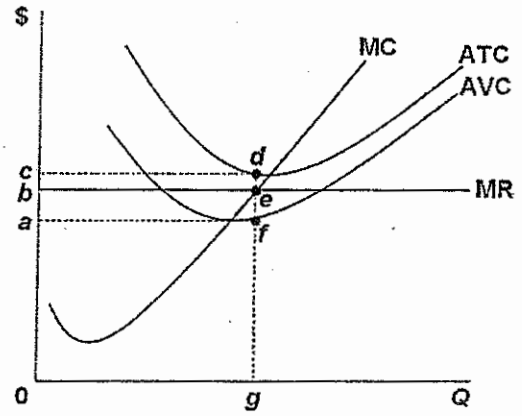
16. Refer to the above table. When the firm produces 3 units of output, it makes an economic:
[A] Profit of $3
B. Loss of $3
C. Profit of $9
D. Loss of $9



17. Refer to the above graph. It shows the cost curves for a competitive firm. At output level 20, the marginal cost is:
A. $0.60
B. $0.90
C. $1.05
[D] $1.25



18. Refer to the above graph. At which point is marginal product (MP) at its maximum?
A. Point *A*
B. Point *B*
C. Point *C*
D. Point *D*



19. Refer to the above graph. It shows a profit-maximizing purely competitive firm operating in the short run. Which area in the graph represents the amount of economic loss for the firm?
A. *0beg*
B. *bcde*
C. *acdf*
D. *abef*

P > ATC

Number of Units of Commodity	Total Utility
3	36
4	80
5	150
6	252
7	350
8	440

$\frac{80-36}{4-3} = 44$

20. Refer to the above table. What is the marginal utility of the fourth unit?
A. 36
B. 44
C. 80
D. 116

Part II 40% 14

1) [15 points] A consumer who buys two goods X and Y with prices Px=4 and Py=2, the consumers income is $18/month. Her consumption schedule is given below:

Q (X, Y)	Mux	Mux/Px	MUy	MUy/Py	Mux/Px'
0					
1	20	5	16	8	10
2	16	4	14	7	8
3	12	3	12	6	6
4	8	2	10	5	4
5	6	1.5	8	4	3
6	4	1	6	3	2

a) [3 points] Calculate the MU per dollar for each good in the in the table above, show the formulas for your calculations below

$\frac{MUx}{Px} \Rightarrow \frac{20}{4}, \frac{16}{4}, \frac{12}{4}, \frac{8}{4}, \frac{6}{4}, \frac{4}{4}$

$\frac{MUy}{Py} \Rightarrow \frac{16}{2}, \frac{14}{2}, \frac{12}{2}, \frac{10}{2}, \frac{8}{2}, \frac{6}{2}$

b) [3 points] What are (State) the equilibrium conditions that must be satisfied to get maximum utility

1- $x + 4y \rightarrow 4 + 8 = 12$

2- $2x + 5y \rightarrow 8 + 10 = 18$

3- $3x + 6y \rightarrow 12 + 12 = 24$

equilibrium $2x + 5y$.

What are these combination?

c) [3 points] How many units of X and Y will she purchase to maximize utility.

2 unit of x and 5 unit of y

d) [3 points] Now suppose the price of X decreases to 2, complete the last column in the table above, find the new combination(s) of X and Y that will maximize utility.

$2x + y \rightarrow 4 + 2 = 6$

$3x + 3y \rightarrow 6 + 6 = 12$

$4x + 5y \rightarrow 8 + 10 = 18$

$5x + 6y \rightarrow 10 + 12 = 22$

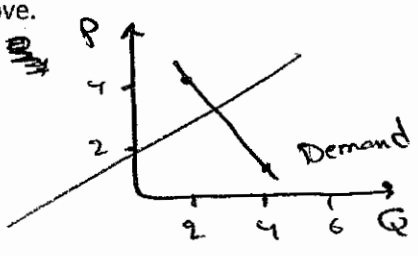
equilibrium $4x + 5y$

why not $\rightarrow \frac{MUx}{Px} = \frac{MUy}{Py}$

$5x + 4y = I = Q_x P_x + Q_y P_y$

e) [3 points] Show graphically the effect of the decrease in the price of X on the demand for Y based on your answer above.

P	Q_x
4	2
2	4



10

2) [10 points] A firm has the following production relation

L	Q	MP_L	AP_L
0	0		
1	45	45	45
2	102	57	51
3	153	51	51
4	195	42	48.75
5	222	27	44.4
6	240	18	40
7	249	9	35.5
8	246	-3	30.75

a) [5 points] Calculate the Average and marginal product of labor in the table above, write down the formulas you use in the space provided below.

Q ⇒ output
L ⇒ input

$MP = \frac{\Delta Q}{\Delta L} \Rightarrow \frac{45-0}{1-0}, \frac{102-45}{2-1}, \frac{153-102}{3-2}, \frac{195-153}{4-3}, \frac{222-195}{5-4}, \frac{240-222}{6-5} \cdots$

$= 45, 57, 51, 42, 27, 18, 9, -3$

$AP = \frac{Q}{L} = \frac{45}{1}, \frac{102}{2}, \frac{153}{3}, \frac{195}{4}, \frac{222}{5}, \frac{240}{6}, \frac{249}{7}, \frac{246}{8}$

$= 45, 51, 51, 48.75, 44.4, 40, 35.5, 30.75$

b) [5 points] If labor is the only variable input and Fixed costs are 100, the wage is 50, what is the variable cost of producing 240 units. What is the average total cost at that point?

$FC = 100$, $w = 50$, produce 240 unit, $L = 6$ — ATC ? VC

$FC = 100$

$VC = L * w$

$= 6 * 50$

$= 300$

$TC = VC + FC$

$= 300 + 100$

$= 400$

$ATC = \frac{TC}{Q}$

$= \frac{400}{240}$

$= 1.66$

15

3) [15 points] A competitive firm has the following cost schedule, the price of output is $15

q	TC	MC	TR	Profit
0	15		0	-15
1	30	15	15	15
2	40	10	30	-10
3	47	7	45	-2
4	55	8	60	5
5	65	10	75	10
6	77	12	90	13
7	92	15	105	13
8	111	19	120	9
9	136	25	135	-1
10	168	32	150	-18

a) [6 points] Complete the table

$MC = \frac{\Delta TC}{\Delta Q}$

$TR = Q * P$

$\pi = TR - TC$

b) [3 points] What are the firms total fixed costs

$TFC = 15$

$TC = TVC + TFC$

$15 = 0 + TFC = 15$

c) [3 points] How many units should the firm produce to maximize profit? Show your answer

it should produce 6 unit Becus TR > TC

This give max profit

and MR ≥ MC

unit 7 give max profit But MR = MC so it's called equilibrium. we can produc it

d) [3 points] calculate profit per unit at the profit maximization point.

profit per unit = $\frac{\text{profit}}{Q}$ at maximization point

$= \frac{13}{7}$

$= 1.85$

Birzeit University
Economics Department
Economics 131

Check Your Instructors name

Instructors:
- Dr. Yousef Daoud (X)
- Dr. Mohammad Nasr ( )
- Dr. Fathi Srouji ( )
- Ms. Shireen Al-Basha ( )

Student Name: Reem Sharif

Student Number: 1101588

2nd Hour Exam

2nd Semester 2010/2011

Place an X on the correct choice

1)	(A)	(B)	(C)	(D)
2)	(A)	(B)	(C)	(D)
3)	(A)	(B)	(C)	(D)
4)	(A)	(B)	(C)	(D)
5)	(A)	(B)	(C)	(D)
6)	(A)	(B)	(C)	(D)
7)	(A)	(B)	(C)	(D)
8)	(A)	(B)	(C)	(D)
9)	(A)	(B)	(C)	(D)
10)	(A)	(B)	(C)	(D)
11)	(A)	(B)	(C)	(D)
12)	(A)	(B)	(C)	(D)
13)	(A)	(B)	(C)	(D)
14)	(A)	(B)	(C)	(D)
15)	(A)	(B)	(C)	(D)
16)	(A)	(B)	(C)	(D)
17)	(A)	(B)	(C)	(D)
18)	(A)	(B)	(C)	(D)
19)	(A)	(B)	(C)	(D)
20)	(A)	(B)	(C)	(D)

98
08
15
82

1. When a firm is experiencing (يحقق) economies of scale:
A. Minimum efficient scale has been achieved
B. Long-run average total cost is decreasing
C. An increase in long-run total cost is accompanied (يصاحب) by a less-than-proportionate (أقل نسبيا) increase in output
D. A given percentage increase in all resource inputs results in a less-than-proportionate increase in output

2. The reason the marginal cost curve eventually (أخيرا) increases as output increases for the typical firm is because:
A. Of diseconomies of scale
B. Of minimum efficient scale
C. Of the law of diminishing returns
D. Normal profit exceeds (يتجاوز) economic profit

3. A consumer makes purchases of a product X such that the marginal utility is 10 and the price is $5. The consumer also tries a new product Y and at the current (حالي) level of consumption it has a marginal utility of 8 and a price of $1. The utility-maximizing rule suggests that this consumer should:
A. Increase consumption of product X and decrease consumption of product Y
B. Increase consumption of product X and increase consumption of product Y
C. Increase consumption of product Y and decrease consumption of product X
D. Decrease consumption of product Y and decrease consumption of product X

4. A firm sells a product in a purely competitive market. The marginal cost of the product at the current output of 800 units is $3.50. The minimum possible average variable cost is $3.00. The market price of the product is $4.00. To maximize profit or minimize losses, the firm should:
A. Continue producing 800 units
B. Produce less than 800 units
C. Produce more than 800 units
D. Shut down

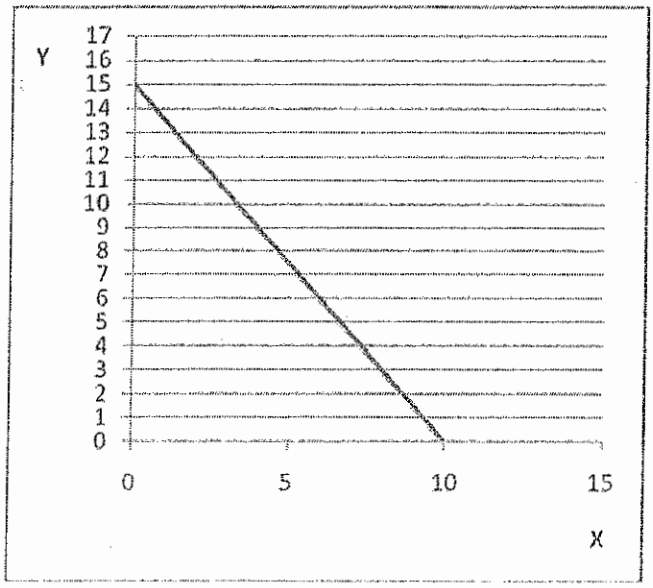
5. In pure competition, the demand for the product of a single firm is perfectly:
A. Elastic because the firm produces a unique فريد product
B. Inelastic because the firm produces a unique product
C. Elastic because many other firms produce the same product
D. Inelastic because many other firms produce the same product

6. Which Of the following statements is true :
A. Economic profit is larger than accounting profit
B. Economic profit is smaller than accounting profit
C. Economic profit equals accounting profit
D. Economic profit cannot be compared to accounting profit

7. If a firm is a price taker, the total revenue curve is :
A. Flat (horizontal line)
B. has an inverted (مقلوب) U shape
C. Downward sloping straight line
D. Upward sloping straight line starting at the origin

8. Which statement is correct?
A. Marginal cost is the change in average cost when there is a change in output of 1 unit
B. The marginal cost curve cuts the average variable cost curve at its lowest point
C. In the long run view of the firm, all costs are fixed
D. If average variable cost is increasing, then average total cost must be increasing too

9. A firm increases the quantity of all resources it employs by 5 percent. As a result, output increases by 7 percent. This is an example of:
A. Minimum efficient scale
B. Diminishing marginal returns
C. Increasing long-run average costs
D. Economies of scale



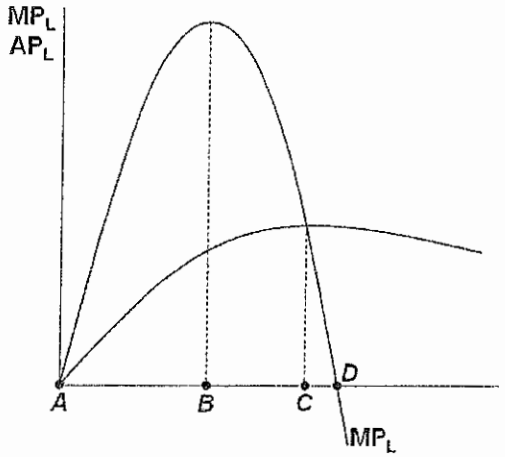
10. In the figure above, a consumer who spends her entire income on two goods X and Y, if the price of Y is $2, then the consumers income is _____ and price of X is _____:
A. $30 and $3
B. $3 and $30
C. $15 and $10
D. $10 and $15

11. When average variable cost is at a minimum:
A. Marginal cost is at a maximum
B. The average product of labor is at a minimum
C. The marginal product of labor is at a minimum
D. The average product of labor is at a maximum

12. The profit-maximizing behavior for a price-taking firm requires it to operate at least where:
A. P = TR = TC
B. P = MC = AVC
C. P = MC = AFC
D. P = MR = MC = AFC

13. Laila is maximizing her satisfaction consuming two goods, A and B. If the marginal utility of A is twice that of B, what is the price of A if the price of B is $.80?
A. $.40
B. $.80
C. $1.20
D. $1.60

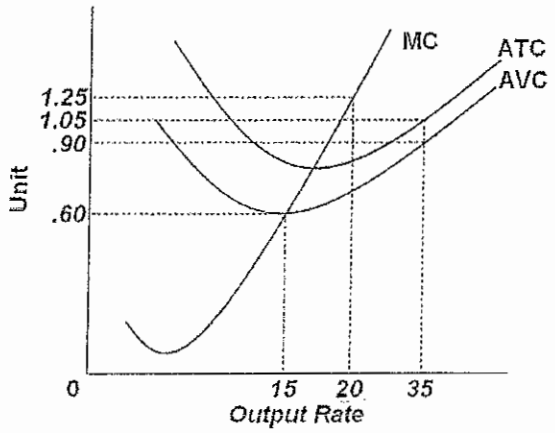
14. The price of diamonds is substantially (بكثير) greater than the price of water because:
A. The total utility of water is greater than the total utility of diamonds
B. The total utility of diamonds is greater than the total utility of water
C. The marginal utility of the last unit of a diamond is significantly (بتميز) greater than the marginal utility of the last unit of a gallon of water
D. The marginal utility of the last unit of a diamond is significantly less than the marginal utility of the last unit of a gallon of water



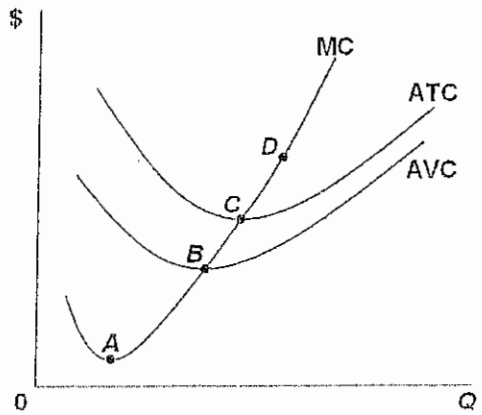
15. Refer to the above graph. It shows the marginal product of labor (MP_L) and the average product of labor (AP_L). At which point are marginal and average product the same as labor is added?
A. Point *A*
B. Point *B*
C. Point *C*
D. Point *D*

Output	Total Revenue	Total Cost
0	$0	$50
1	40	74
2	80	94
3	120	117
4	160	142
5	200	172

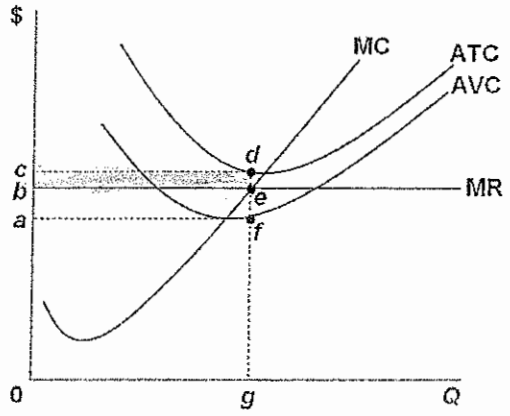
16. Refer to the above table. When the firm produces 3 units of output, it makes an economic:
A. Profit of $3
B. Loss of $3
C. Profit of $9
D. Loss of $9



17. Refer to the above graph. It shows the cost curves for a competitive firm. At output level 20, the marginal cost is:
A. $0.60
B. $0.90
C. $1.05
D. $1.25



18. Refer to the above graph. At which point is marginal product (MP) at its maximum?
A. Point *A*
B. Point *B*
C. Point *C*
D. Point *D*



19. Refer to the above graph. It shows a profit-maximizing purely competitive firm operating in the short run. Which area in the graph represents the amount of economic loss for the firm?
A. *0beg*
B. *bcde*
C. *acdf*
D. *abef*

Number of Units of Commodity	Total Utility
3	36
4	80
5	150
6	252
7	350
8	440

20. Refer to the above table. What is the marginal utility of the fourth unit?
A. 36
B. 44
C. 80
D. 116

Part II 40%

1) [15 points] A consumer who buys two goods X and Y with prices Px=4 and Py=2, the consumers income is $18/month. Her consumption schedule is given below:

Q (X, Y)	Mux	Mux/Px	MUy	MUy/Py	Mux/Px'
0					
1	20	5	16	8	10
2	16	4	14	7	8
3	12	3	12	6	6
4	8	2	10	5	4
5	6	1.5	8	4	3
6	4	1	6	3	2

a) [3 points] Calculate the MU per dollar for each good in the in the table above, show the formulas for your calculations below

MU per dollar for x $= \frac{MUx}{Px} = \frac{20}{4} = 5$ when Q = 1

MU Per dollar for y $= \frac{MUy}{Py} = \frac{16}{2} = 8$ when Q = 1

b) [3 points] What are (State) the equilibrium conditions that must be satisfied to get maximum utility

the last dollar spent should get the same MU for each good.

$\frac{MUx}{Px} = \frac{MUy}{Py} \Rightarrow \frac{16}{4} = \frac{8}{2} = 2$

to get maximum utility she should buy 5 of y and 2 of x within the income

c) [3 points] How many units of X and Y will she purchase to maximize utility.

5 units of y

2 units of x

d) [3 points] Now suppose the price of X decreases to 2, complete the last column in the table above, find the new combination(s) of X and Y that will maximize utility.

5 units of X

4 units of y

e) [3 points] Show graphically the effect of the decrease in the price of X on the demand for Y based on your answer above.

2) [10 points] A firm has the following production relation

L	Q	MP_L	AP_L
0	0	0	0
1	45	45	45
2	102	57	51
3	153	51	51
4	195	42	48.75
5	222	27	44.4
6	240	18	40
7	249	9	35.57
8	246	-3	30.75

a) [5 points] Calculate the Average and marginal product of labor in the table above, write down the formulas you use in the space provided below.

AP_L = Product output / Labor input

MP_L = Marginal product output / change in labor input

b) [5 points] If labor is the only variable input and Fixed costs are 100, the wage is 50, what is the variable cost of producing 240 units. What is the average total cost at that point?

$50 \times 6 = 300$

$300 + 100 = 400$

$ATC = \frac{400}{6} = 66.6$

6

9

Economics Department
Economics 131

Check Your Instructors name
Instructors: Dr. Said Haifa (Coordinator)
Dr. Basim Makhool (Section 2)
Miss Shireen Basha (Section 3)
Dr. Yousef Daoud (Section 4)
Mr. Mohammad Amreyeh(Section 5)

79

Student Name: [redacted]
Second Hour Exam

Student Number: [redacted]
First Semester 2011/2012

ANSWER SHEET

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

10

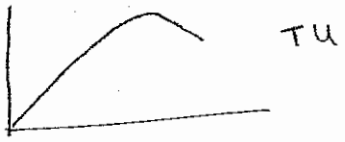
PART TWO

1. If goods A and B have a cross elasticity of demand that is positive, this is evidence(دليل) that goods A and B are _____ goods.

a. complementary
b. substitute
c. normal
d. inferior

2. "As additional units of a variable input are added to a fixed input, eventually(بعد فترة) the marginal physical product of the variable input will decline." This is a statement of the

a. law of supply.
b. average-marginal rule.
c. law of diminishing marginal utility.
d. law of diminishing marginal returns.



TC TUC

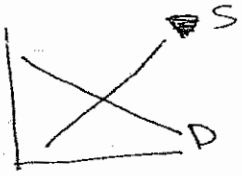
3. At 100 units of output, total cost is $40,000 and total variable cost is $34,000. At 100 units of output, what is the value of average total cost, average variable cost, and average fixed cost, respectively(على التوالي)?

ATC AVC AFC
=400 340 =60

a. $40; $34; $6
b. $400; $340; $60
c. $740; $340; $400
d. $340; $740; $60
e. $400, $340; There is not enough information provided to determine the average fixed cost.

4. The short-run industry supply curve is the

a. horizontal summation of the short-run supply curves for all firms in the industry.
b. vertical summation of the short-run supply curves for all firms in the industry.
c. average of the short-run supply curves for all firms in the industry.
d. same as that of the typical firm in the industry.



5. If the price of good A decreases by 10 percent and the quantity demanded of good B increases by 10 percent, this is evidence that A and B are

A ↓ 10%
B ↑ 10%

a. substitute goods.
b. complement goods.
c. inferior goods.
d. normal goods.
e. not related.

6. If Jack bought 21 CDs last year when his income was $18,000 and he buys 23 CDs this year when his income is $20,000, then his income elasticity of demand is _____ making CDs a(n) _____ good for Jack.

a. +1.16; normal
b. -1.16; inferior
c. +0.86; normal
d. +0.86; inferior
e. -0.44; inferior

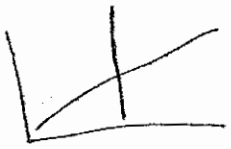
$$\frac{\frac{Q_2 - Q_1}{Q_2 + Q_1}}{\frac{P_2 - P_1}{P_2 + P_1}} = \frac{\frac{23-21}{23+21}}{\frac{20000-18000}{20000+18000}} = \frac{0.04545}{0.0526}$$

2

0.86

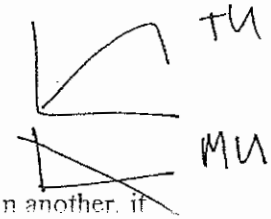
11

7. Price elasticity of supply registers(يعطي) perfect inelasticity at the value of
a. infinity.
b. 1.
c. 0.
d. -1.



8. Suppose you just finished your third free pizza slice dinner and it yielded zero units of additional satisfaction. Should you go back for more?
a. Why not? Since the third plateful gave you zero units, the fourth can't give you any less than zero
b. No way. You could get negative utility from the fourth plateful.
c. Yes or no. It won't make any difference because your total utility is at its peak.
d. Yes. If you received zero units of satisfaction from the third, then obviously the law of diminishing marginal utility is not working in this case.

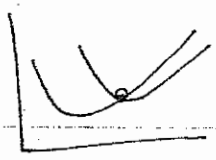
9. We would expect the total utility of diamonds to be ↑ than the total utility of water and the marginal utility of diamonds to be _____ than the marginal utility of water.
a. higher; higher
b. lower; lower
c. higher; lower
d. lower; higher

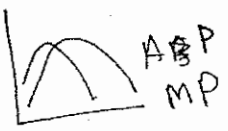


10. If a person is receiving greater marginal utility per dollar from consuming one good than another, it follows that he or she is
a. maximizing disutility.
b. not maximizing utility.
c. maximizing utility.
d. There is not enough information to answer the question.

11. If the average variable cost curve is falling,
a. the MC curve must be below it.
b. marginal cost is greater than average variable cost.
c. the MC curve is necessarily falling.
d. the MC curve is necessarily horizontal (neither rising nor falling).
e. the MC curve is necessarily rising.

12. Suppose a given marginal cost curve starts out downward sloping and at some point turns upward. The point at which it turns upward is the point at which
a. marginal physical product increases.
b. total cost rises.
c. average fixed cost declines.
d. average variable cost is below marginal cost.
e. diminishing marginal returns set in.





12

13. Suppose a producer decides that if the price of her product is $9, the quantity supplied will be 1,000 units, and if the price is $11, the quantity supplied will be 1,300. The price elasticity of supply for the good is approximately

a. +1.91.
b. -1.30.
c. +0.77.
d. -0.77.
e. +1.30.

$\frac{\frac{1300-1000}{1000+1300}}{\frac{11-9}{11+9}} = \frac{0.13}{0.1}$

14. If explicit costs equal $40,000, implicit costs equal $95,000, and accounting profit equals $23,000, it follows that total revenue equals _____ and economic profit equals _____.

a. $75,000; $17,000
b. $63,000; -$72,000
c. $68,000; $25,000
d. $22,000; -$68,000
e. There is not enough information given to answer this question.

$TR = P \times Q$

$AP = TR - EC$

$23000 = TR - 40000$

$TR = 63000$

15. If the LRATC curve is falling, then

a. the law of diminishing marginal returns is operating(يعمل).
b. economies of scale are present(موجودة).
c. constant returns to scale are present.
d. diseconomies of scale are present.

16. Economies of scale are said to exist when inputs are increased by some percentage and output increases by a(n) _____ percentage, causing unit costs to _____.

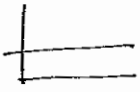
a. greater; fall
b. smaller; fall
c. greater; rise
d. smaller; rise
e. equal; fall

17. The price at which a perfectly competitive firm sells its product is determined by

a. the individual seller based on his costs of production and his profit margin.
b. all sellers and buyers of the product, collectively.
c. the buyers of the product, because there are so many sellers that they cannot agree on a price.
d. the government, because there are so many buyers and sellers of the product that together they cannot agree on the price.

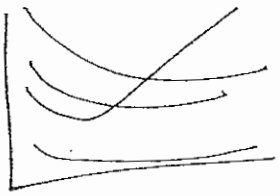
18. The demand curve for a perfectly competitive *firm*

a. is downward sloping.
b. is upward sloping.
c. is perfectly horizontal.
d. is perfectly vertical.
e. may be downward or upward sloping, depending upon the type of product offered for sale.



13

19. The marginal cost curve cuts the _____ curve at its lowest point.
a. average variable cost
b. average total cost
c. average fixed cost
d. a and b
e. a, b, and c



MRevenue = ΔTU / ΔP

20. Marginal revenue is
a. total revenue divided by the quantity of output.
b. total profit minus total costs.
c. the change in total output brought about by using an additional unit of a variable input.
d. the change in total revenue brought about by selling an additional unit of the good.
e. the change in total revenue minus the change in total costs.

Price = 10

21. Consider the following data: equilibrium price = $10, quantity of output produced = 1,000 units, average total cost = $8, and average variable cost $5. Given this, total revenue is _____, total cost is _____, and fixed cost is _____.
a. $6,000; $8,000; $1,000
b. $9,000; $7,000; $8,000
c. $10,000; $8,000; $3,000
d. $9,000; $8,000; $6,000
e. none of the above

Total Revenue = P x Q

Average fixed cost = $3

14

$MC = \frac{\Delta TC}{\Delta Units}$

$AFC = \frac{TFC}{units}$ $AVC = \frac{TVC}{units}$ $ATC = AFC + AVC$

PART TWO
QUESTION ONE (10 POINTS)

a- Complete the following table:

Fixed cost = 60, variable cost: zero, 44, 84, 100, 150

Total Product	Total Cost	Average Fixed Cost	Average Variable Cost	Marginal Cost
0	60	-	-	-
1	104	60	44	44
2	144	30	42	40
3	160	20	33.3	16
4	210	15	37.5	50

QUESTION ONE (15 POINTS)

The table below shows the marginal utility derived from consuming goods A and B for a consumer. The price of both goods is \$1 per unit and the income of the consumer is \$11.

Good A				Good B			↓ new MU per dollar
Units	MUA	MU per dollar	↓ new	units	MUA	MU per dollar	↓
1	10	10	10	1	16	16	16/2 = 8
2	9	9	9	2	14	14	14/2 = 7
3	8	8	8	3	12	12	12/2 = 6
4	7	7	7	4	10	10	10/2 = 5
5	6	6	6	5	8	8	8/2 = 4
6	5	5	5	6	6	6	6/2 = 3
7	4	4	4	7	4	4	4/2 = 2

a- Find all combinations that satisfy first condition of utility maximization

$\frac{MUA \text{ of good A}}{\text{price of A}} = \frac{MUA \text{ of good B}}{\text{price of B}}$

1. 1 unit of A and 4 units of B = 1x1 + 4x1 = 5
2. 3 units of A and 5 units of B = 3x1 + 5x1 = 8
3. 5 units of A and 6 units of B = 5x1 + 6x1 = 11
4. 7 units of A and 7 units of B = 7x1 + 7x1 = 14

b- How many units of good A and B, should be purchased to maximize utility.

the second condition is that all income must be spent so 5 units of A and 6 units of B should be purchased to maximize utility

5x1 + 6x1 = 11
(A) (B)

c- What is the consumer total utility from consuming the equilibrium utility maximizing combination.

From consuming 5 units of A = 6+7+8+9+10 = 40 utils

From consuming 6 units of B = 6+8+10+12+14+16 = 66 utils

total utility = 40 + 66 = 106 utils

d- Assume that the price of good B increased to \$2 per unit, while the price of good A remain at \$1 per unit and consumers income is \$11. What is the new equilibrium combination of both goods.

units of B	new MU/per dollar of B	MU per dollar of A
1	16/2 = (8)	10
2	14/2 = (7)	9
3	12/2 = (6)	(8)
4	10/2 = (5)	(7)
5	8/2 = (4)	(6)
6	6/2 = 3	(5)
7	4/2 = 2	(4)

new equilibrium

1 units of B + 3 units of A = 1x2 + 3x1 = 5

2 units of B + 4 units of A = 2x2 + 4x1 = 8

3 units of B + 5 units of A = 3x2 + 5x1 = 11

4 units of B + 6 units of A = 4x2 + 6x1 = 14

5 units of B + 7 units of A = 5x2 + 7x1 = 17

∴ 3 units of B + 5 units of A maximize utility

QUESTION THREE(15 POINTS)

The following table indicated the total revenue and total cost for a purely competitive.

output	Total Revenue	Total Cost	MR	MC
0	0	50	–	–
1	40	74	40	24
2	80	94	40	20
3	120	117	40	23
4	160	142	40	25
5	200	172	40	30

MC=P

Use the marginal approach (MR and MC) to determine the rate of output that firm should produce to maximize its profit.

- The rate of output = 5 units
- Total Profits = 28 = total revenue – total cost = 200–172 = 28
- The price = 40

marginal revenue = $\frac{\Delta TR}{\Delta output}$

marginal cost = $\frac{\Delta TC}{\Delta output}$

Total revenue = price x quantity

200 = price x 5

price = 40

Total profit = quantity (price – A

Total profit = TR – TC

Student Name: Abd-alu-t-t MoHammed Mari

Student Number: 1120017

13

BIRZEIT UNIVERSITY

Department of Economics

ECON 131 –Microeconomic Principle

Second Exam

98/100

Check Your Instructor Name

Instructor: Dr. Said Haifa ( )
Dr. Muhanad Abu-Rjaile ( )
Mr. Mohammad Amreyeh (✓)
Miss Shireen Basha ( )

Answer Sheet

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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

47.5

Part I: Multiple Choices (2.5 points each)

Read each question carefully and select the best response. Circle the appropriate letter of the response and fill in the corresponding circle on your answer sheet.

1. Which is an explanation for why the demand curve is down sloping?
   (A) normal goods
   (B) the law of diminishing marginal utility
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   (D) the law of supply
   (E) The law of diminishing marginal returns

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   (A) The frequency with which a player can be substituted into a game.
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   (C) The rate an individual is willing to trade one unit of x for one unit of y remaining at the same income level.
   (D) The slope of the budget line.
   (E) Is the relationship between the price of the good and the quantity the individual desires at that price

4. If the quantity demanded of good A decreases by 5% when the price of good B increases by 5%, then
   (A) A and B are substitute goods
   (B) A and B are complement goods
   (C) A and B are inferior goods
   (D) A and B are normal goods

5. A consumer's budget line shows
   (A) The utility that an individual would receive from consuming various combinations of two goods.
   (B) The combinations of two products a consumer can purchase with a specific money income.
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6. If a producing firm does not have enough time to expand its plant capacity, it is:
   (A) Bankrupt (يعلن افلاسه).
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7. Jessica experienced an increase in her income by 10% this year. In the same year, Jessica's quantity demanded of milk increased by 10% and her quantity demanded for bread increased by 5%. This means that for Jessica:
   (A) Both milk and bread are normal goods
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   (C) Both milk and bread are inferior goods
   (D) Milk is an inferior good, but bread is a normal good
   (E) Milk and bread are substitutes goods

8. When the total utility from consuming one good is maximized, marginal utility is
   (A) Zero.
   (B) Minimized.
   (C) Maximized.
   (D) Positive.

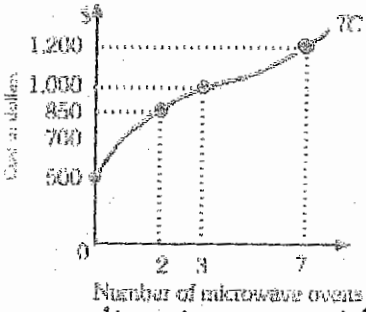
9. The concept of diminishing marginal utility is that increases in the consumption of a good lead to
(A) A decrease in total utility.
(B) An increase in marginal utility.
(C) A decrease in marginal utility.
(D) No change in marginal utility.
(E) No change in total utility.

10. If 11 workers can produce a total of 54 units of a product and another worker has a marginal product of six, then the average product of 12 workers is:
(A) 5 (B) 48 (C) 54 (D) 60 (E) 4.5

11. Suppose that a consumer's annual income decreased by $300, causing a 15% decrease in the units of food the consumer demands. If the consumer has income elasticity *(point elasticity)* of demand of 1 for food, what is her new income?
(A) $2700 (B) $3000. (C) $1700. (D) $3300. (E) $2300.

12. With fixed costs of $400, a firm has average total costs of $3 and average variable costs of $2.50. Its output is:
(A) 200 units (B) 400 units (C) 800 units (D) 1,600 units (E) 160 units

13. Refer to the Figure. The average variable cost at an output level of 7 units is:
(A) $171.4
(B) $71.4
(C) $100
(D) 1200



14. If marginal cost is below average total cost, average total cost will
(A) Be maximized.
(B) be decreasing
(C) Be increasing.
(D) Remain constant.

15. If fixed cost is $130 at quantity (Q) = 100, then
(A) Fixed cost is $0 at Q = 0
(B) Fixed cost is $260 at Q = 200
(C) Fixed cost is less than $130 at Q = 0
(D) Fixed cost is $130 at Q = 200

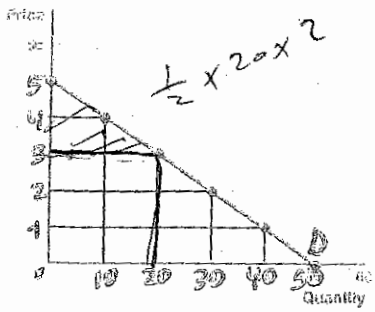
16. If the income elasticity of demand for chocolate candies is 0.8, what percentage change in income is necessary to increase the amount of chocolate candies demanded by 12%?
(A) Increase income by 15%.
(B) Decrease income by 9.6%.
(C) Increase income by 9.6%.
(D) Decrease income by 15%.

17. If the price elasticity of supply for a good is 0.5, then
(A) An increase in the price boosts the quantity supplied by a larger percentage.
(B) The supply is elastic.
(C) The percentage change in the quantity supplied is less than the percentage change in price.
(D) A 10 percent increase in price will decrease quantity supplied by 0.5 percent
(E) None of the above answers are correct.

18. A consumer has spent all of his funds on hamburgers and movies. The price of a hamburger is $3 and the price of a movie is $5. The marginal utility of the last hamburger is 6 and the marginal utility of the last movie is 8. This consumer has
(A) Maximized utility.
(B) Not maximized utility. To maximize utility, he should spend all income on movie
(C) Not maximized utility. To maximize utility, he should cut back on movies and buy more hamburgers.
(D) Not maximized utility. To maximize utility, he should cut back on hamburgers and buy more movies.
(E) Not maximized utility. To maximize utility, he should cut back consumption of each.

19. Refer to the Figure .If the market price of the good is $3, consumer surplus will equal :

(A) $30
(B) $40
(C) $45
(D) $20

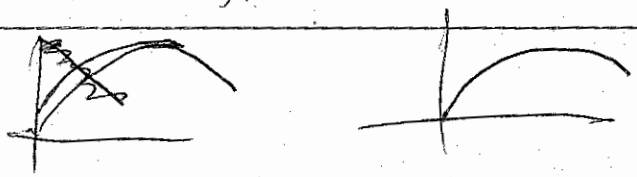


20. The law of diminishing marginal returns states that as additional units of a variable input are added to

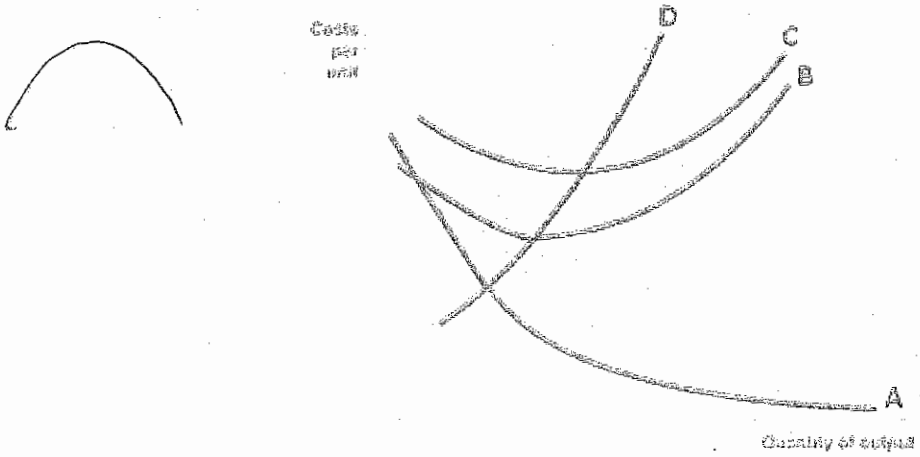
(A) Fixed amounts of other inputs, total output will eventually decline
(B) Varying amounts of other inputs, total output will eventually decline
(C) Fixed amounts of other inputs, the resulting increases in total output will eventually become smaller.
(D) Varying amount of other inputs, the resulting increases in total output will eventually become smaller.
(E) A declining amount of output, technology will eventually deteriorate (يتدهور).

PART TWO: Short Answer

Question #1 (20 marks)



I. The set of lines above reflect information about the cost structure of a firm. Use the figure to answer the following questions. *(2mark each)*



1. Which of the lines is most likely to represent average total cost? C
2. Which of the lines is most likely to represent margianl cost? D
3. Which of the lines is most likely to represent average fixed cost? A
4. Which of the lines is most likely to represent average variable cost? B

Question #2 (16marks)

Quantity of hamburgers	Marginal Utility of hamburger	Quantity of Magazine	Marginal Utility of Magazine	MU per dollar of hamburger	MU per dollar of Magazine
1	50	1	200	50/2 = 25	200/5 = 40
2	40	2	100	20	20
3	12	3	50	6	10
4	10	4	30	5	6
5	6	5	15	3	3
6	2	6	5	1	1

Table above shows Kareem's utility from hamburger and Magazine. The price of hamburger is $2 per unit and the price of a Magazine is $5. Kareem has $26 to spend on these two goods.

a. Fill in the blank in the above table *(3marks)*

b. Find all combinations that satisfy the utility maximization condition, and calculate the cost of each combination. *(5marks)*

Group	choices	MU per dollar	Income spend (cost of each combination)
A	H = 2, M = 2	20	2×2 + 2×5 = 14
B	H = 3, M = 4	6	3×2 + 4×5 = 26 = I
C	H = 5, M = 5	3	5×2 + 5×5 = 35
D	H = 6, M = 6	1	6×2 + 6×5 = 42

c. Which combination (group) is a utility maximization for Kareem? *(3marks)*

Group B ⇒ Purchase 3 unit of Hamburger and 4 unit of Magazine because he spend all his income in it = 26

and MU per dollar H = M

d. What total utility will Karem realize? *(3marks)*

utility from 3 unit of Hamburger = 50 + 40 + 12 = 102

utility from 4 unit of Magazine = 200 + 100 + 50 + 30 = 380

∴ Total utility = 102 + 380 = 482 unit of utility

e. Suppose that income is increased from $26 to $35, what quantities of hamburger and Magazine will Kareem purchase to maximize utility? *(3marks)*

If Income Increase he will purchase 5 unit of Hamburger and 5 unit of Magazine to maximize utility

H = 5
M = 5

group	
A	
B	26 ⇒ 5 = 5
C	35 = I
D	

f. Calculate the income elasticity of demand for hamburger when income increases from $26 to $35. *(3marks)*

$$E_{\text{Income E of demand}} = \frac{\Delta Q_2 - Q_1}{Q_1 + Q_2} \times \frac{I_1 + I_2}{I_2 - I_1} = \frac{5-3}{8} \times \frac{26+35}{35-26}$$

$$= \frac{2}{8} \times \frac{61}{9} = 1.694$$

demand on Hamburger Increase when Income Increase for the normal good.

10

Question #3 (10 marks)

Using the following table to answer the questions below:

Labor	Total Product (Output)	Average Product (AP)	Marginal Product (MP)
1	20	20	—
2	24*2 = 48	24	28
3	78	26	30
4	104	26	26
5	122	24.4	18

$18 = X - 104$

$\therefore X = 122$

1. What is the total product (TP) when 2 workers are employed? *(2 marks)*

when $L = 2$ then $AP = 24$

$AP = \frac{TP}{L} \Rightarrow \therefore TP = 24 * 2 = 48$

2. What are the total product (TP) and the average product (AP) when 3 workers are employed? *(4 marks)*

when $L = 3 \Rightarrow MP = 30$

$MP = \frac{\Delta TP}{\Delta L} \Rightarrow 30 = \frac{X - 48}{3-2} \Rightarrow 30 = X - 48 \Rightarrow \therefore X = 48 + 30 = 78$

$\therefore$ Total Product when $L = 2 \Rightarrow TP = 78$

when $L = 3$

$AP = \frac{TP}{L} = \frac{78}{3} = 26$

3. What are the average product (AP) and the marginal product (MP) when 4 workers are employed? *(4 marks)*

$L = 4$

$AP = \frac{TP}{L} = \frac{104}{4} = 26$

and $MP = \frac{\Delta TP}{\Delta L} = \frac{104 - 78}{4 - 3} = 26$

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13

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14.	A	B	C	D	E
15.	A	B	C	D	E
16.	A	B	C	D	E
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47.5

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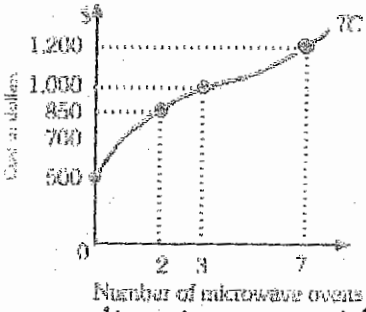
(A) $171.4
(B) $71.4
(C) $100
(D) 1200



14. If marginal cost is below average total cost, average total cost will
(A) Be maximized.
(B) be decreasing
(C) Be increasing.
(D) Remain constant.

15. If fixed cost is $130 at quantity (Q) = 100, then
(A) Fixed cost is $0 at Q = 0
(B) Fixed cost is $260 at Q = 200
(C) Fixed cost is less than $130 at Q = 0
(D) Fixed cost is $130 at Q = 200

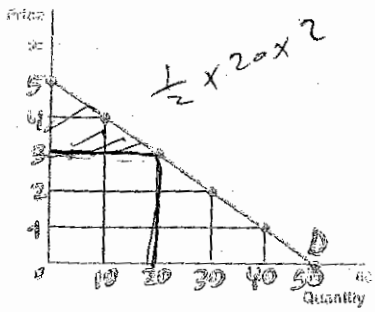
16. If the income elasticity of demand for chocolate candies is 0.8, what percentage change in income is necessary to increase the amount of chocolate candies demanded by 12%?
(A) Increase income by 15%.
(B) Decrease income by 9.6%.
(C) Increase income by 9.6%.
(D) Decrease income by 15%.

17. If the price elasticity of supply for a good is 0.5, then
(A) An increase in the price boosts the quantity supplied by a larger percentage.
(B) The supply is elastic.
(C) The percentage change in the quantity supplied is less than the percentage change in price.
(D) A 10 percent increase in price will decrease quantity supplied by 0.5 percent
(E) None of the above answers are correct.

18. A consumer has spent all of his funds on hamburgers and movies. The price of a hamburger is $3 and the price of a movie is $5. The marginal utility of the last hamburger is 6 and the marginal utility of the last movie is 8. This consumer has
(A) Maximized utility.
(B) Not maximized utility. To maximize utility, he should spend all income on movie
(C) Not maximized utility. To maximize utility, he should cut back on movies and buy more hamburgers.
(D) Not maximized utility. To maximize utility, he should cut back on hamburgers and buy more movies.
(E) Not maximized utility. To maximize utility, he should cut back consumption of each.

19. Refer to the Figure .If the market price of the good is $3, consumer surplus will equal :

(A) $30
(B) $40
(C) $45
(D) $20

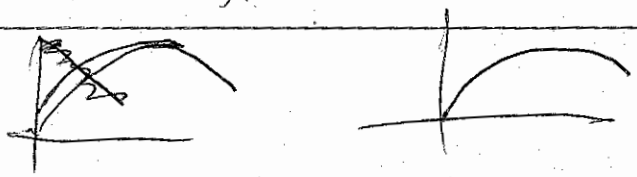


20. The law of diminishing marginal returns states that as additional units of a variable input are added to

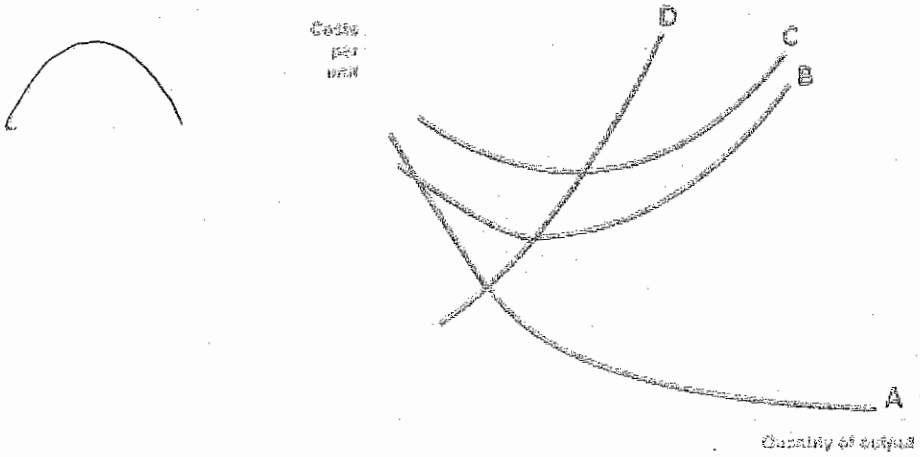
(A) Fixed amounts of other inputs, total output will eventually decline
(B) Varying amounts of other inputs, total output will eventually decline
(C) Fixed amounts of other inputs, the resulting increases in total output will eventually become smaller.
(D) Varying amount of other inputs, the resulting increases in total output will eventually become smaller.
(E) A declining amount of output, technology will eventually deteriorate (يتدهور).

PART TWO: Short Answer

Question #1 (20 marks)



I. The set of lines above reflect information about the cost structure of a firm. Use the figure to answer the following questions. *(2mark each)*



1. Which of the lines is most likely to represent average total cost? C
2. Which of the lines is most likely to represent margianl cost? D
3. Which of the lines is most likely to represent average fixed cost? A
4. Which of the lines is most likely to represent average variable cost? B

Question #2 (16marks)

Quantity of hamburgers	Marginal Utility of hamburger	Quantity of Magazine	Marginal Utility of Magazine	MU per dollar of hamburger	MU per dollar of Magazine
1	50	1	200	50/2 = 25	200/5 = 40
2	40	2	100	20	20
3	12	3	50	6	10
4	10	4	30	5	6
5	6	5	15	3	3
6	2	6	5	1	1

Table above shows Kareem's utility from hamburger and Magazine. The price of hamburger is $2 per unit and the price of a Magazine is $5. Kareem has $26 to spend on these two goods.

a. Fill in the blank in the above table *(3marks)*

b. Find all combinations that satisfy the utility maximization condition, and calculate the cost of each combination. *(5marks)*

Group	choices	MU per dollar	Income spend (cost of each combination)
A	H = 2, M = 2	20	2×2 + 2×5 = 14
B	H = 3, M = 4	6	3×2 + 4×5 = 26 = I
C	H = 5, M = 5	3	5×2 + 5×5 = 35
D	H = 6, M = 6	1	6×2 + 6×5 = 42

c. Which combination (group) is a utility maximization for Kareem? *(3marks)*

Group B ⇒ Purchase 3 unit of Hamburger and 4 unit of Magazine because he spend all his income in it = 26

and MU per dollar H = M

d. What total utility will Karem realize? *(3marks)*

utility from 3 unit of Hamburger = 50 + 40 + 12 = 102

utility from 4 unit of Magazine = 200 + 100 + 50 + 30 = 380

∴ Total utility = 102 + 380 = 482 unit of utility

e. Suppose that income is increased from $26 to $35, what quantities of hamburger and Magazine will Kareem purchase to maximize utility? *(3marks)*

If Income Increase he will purchase 5 unit of Hamburger and 5 unit of Magazine to maximize utility

H = 5
M = 5

group	
A	
B	26 ⇒ 5 = 5
C	35 = I
D	

f. Calculate the income elasticity of demand for hamburger when income increases from $26 to $35. *(3marks)*

$$E_{\text{Income E of demand}} = \frac{\Delta Q_2 - Q_1}{Q_1 + Q_2} \times \frac{I_1 + I_2}{I_2 - I_1} = \frac{5-3}{8} \times \frac{26+35}{35-26}$$

$$= \frac{2}{8} \times \frac{61}{9} = 1.694$$

demand on Hamburger Increase when Income Increase for the normal good.

10

Question #3 (10 marks)

Using the following table to answer the questions below:

Labor	Total Product (Output)	Average Product (AP)	Marginal Product (MP)
1	20	20	—
2	24*2 = 48	24	28
3	78	26	30
4	104	26	26
5	122	24.4	18

$18 = X - 104$

$\therefore X = 122$

1. What is the total product (TP) when 2 workers are employed? *(2 marks)*

when $L = 2$ then $AP = 24$

$AP = \frac{TP}{L} \Rightarrow \therefore TP = 24 * 2 = 48$

2. What are the total product (TP) and the average product (AP) when 3 workers are employed? *(4 marks)*

when $L = 3 \Rightarrow MP = 30$

$MP = \frac{\Delta TP}{\Delta L} \Rightarrow 30 = \frac{X - 48}{3-2} \Rightarrow 30 = X - 48 \Rightarrow \therefore X = 48 + 30 = 78$

$\therefore$ Total Product when $L = 2 \Rightarrow TP = 78$

when $L = 3$

$AP = \frac{TP}{L} = \frac{78}{3} = 26$

3. What are the average product (AP) and the marginal product (MP) when 4 workers are employed? *(4 marks)*

$L = 4$

$AP = \frac{TP}{L} = \frac{104}{4} = 26$

and $MP = \frac{\Delta TP}{\Delta L} = \frac{104 - 78}{4 - 3} = 26$

102

Economics Department
Economics 131

77/100

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SECOND EXAM First Semester 2012/2013

ANSWER SHEET

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

30

Multiple Choices Questions:

Choose the one alternative that best completes the statement or answers the question.

1. If the quantity demanded of tea increases by 2% when the price of coffee increases by 6%, the cross-price elasticity of demand between tea and coffee is
   (A) -3
   (B) 0.33
   (C) 3
   (D) 12

2. For Matthew, the marginal utility of the 9th soda in a day is positive and the marginal utility of the 10th soda in a day is zero. This
   (A) implies that (يشير إلى) Matthew's demand curve for sodas per day will become upward sloping at 10 sodas per day
   (B) is impossible because each additional unit of consumption of any good must provide positive marginal utility.
   (C) implies that at a zero price Matthew's demand curve will intersect (يقطع) the quantity axis at 10.
   (D) implies that Matthew maximizes utility by consuming 9 sodas per day.

3. The law of diminishing marginal utility implies that
   (A) demand curves always slope downward and to the right.
   (B) supply curves always slope upward and to the right.
   (C) a consumer will always buy positive amounts of all goods.
   (D) total utility will always increase by an increasing amount as consumption (الاستهلاك) increases.

4. The diamond/water paradox (متناقضة) states that things with the _____ value in use (قيمة الاستخدام) frequently have _____ value in exchange (قيمة التبادل).
   (A) least; the least
   (B) least; little or no
   (C) greatest; little or no
   (D) greatest; the greatest

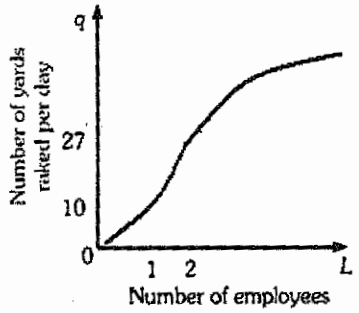
5. For normal goods, the substitution and income effects of a price decrease will
   (A) both decrease the quantity of the good demanded.
   (B) both increase the quantity of the good demanded.
   (C) the substitution effect will increase the quantity of the good demanded while (بينما) the income effect will decrease the quantity of the good demanded.
   (D) the substitution effect will decrease the quantity of the good demanded while the income effect will increase the quantity of the good demanded.

6. In the short run, a firm
   (A) has at least one fixed factor of production.
   (B) can enter an industry (الدخول إلى الصناعة) where positive profits are being earned.
   (C) can exit an industry and all of its factors of production are variable.
   (D) both (B) and (C) are correct.

7. Economic costs
   (A) include (تتضمن) both a normal rate of return on investment (Normal Profit) and the opportunity cost of each factor of production.
   (B) are equal to the direct costs of hiring (توظيف) all factors of production.
   (C) are the opportunity cost of each factor of production minus any interest charges paid on borrowed funds.
   (D) are equal to total revenue minus accounting profit.

Refer to the information provided in Figure 7.3 below to answer the questions 8, and 9.

Figure 7.3



8. Refer to Figure 7.3. The marginal product of the second worker is _____ yards raked.
   (A) 2
   (B) 13.5
   (C) 17
   (D) 27

9. Refer to Figure 7.3. The average product of the second worker is _____ yards raked.
   (A) 4
   (B) 13.5
   (C) 14
   (D) 27

10. Jallal is consuming X and Y so that he is spending his entire income (كامل دخله) and $\frac{MUX}{PX}$ = 8 and $\frac{MUY}{PY}$ = 4. To maximize utility, he should consume
    (A) the same amount of X and Y since he is already maximizing utility.
    (B) less of both X and Y.
    (C) more X and less Y.
    (D) less X and more Y.

11. Shireen is maximizing her utility. Her $\frac{MUX}{PX}$ = 10 and MUy = 40. Then the price of Y must be
    (A) $1
    (B) $4
    (C) $10
    (D) $40

12. The marginal products of the first, second, and third workers are 20, 12, and 8, respectively (على التوالي). If four workers can produce 45 units of output, then the marginal product of the fourth worker is _____.
    (A) 4
    (B) 5.
    (C) 40
    (D) 45

13. At the Larson Bakery (مخبز) the marginal products of the first, second, and third salesclerks are 20, 17, and 11 customers served, respectively. The total product (number of customers served) of the three salesclerks is
    (A) 11
    (B) 40
    (C) 46
    (D) 48

14. If labor is a variable input in production, the law of diminishing marginal returns implies that in the short run
    (A) labor's marginal product is constant
    (B) labor's marginal product decreases after a certain point.
    (C) total product is negative.
    (D) total product is negative after a certain point has been reached

15. When total product is maximized, marginal product
    (A) and average product are zero.
    (B) is positive but average product is zero.
    (C) is zero but average product is positive.
    (D) and average product are positive.

16. The Lawn Ranger, a landscaping company, has total costs of $5,000 and total fixed costs of $3,000. The Lawn Ranger's total variable costs are
    (A) $2000
    (B) $3,000
    (C) $5,000.
    (D) indeterminate because the firm's output level is not known.

17. In the short run when the marginal product of labor _____, the marginal cost of an additional unit of output _____.
    (A) rises; rises
    (B) falls; falls
    (C) rises; falls
    (D) falls; doesn't change

18. In the short run, as output increases,
    (A) the difference between average total cost and average variable cost decreases.
    (B) the difference between total cost and average variable cost decreases.
    (C) marginal cost eventually decreases.
    (D) All of the above are correct.

19. Diminishing marginal returns implies
    (A) decreasing average variable costs.
    (B) decreasing marginal costs.
    (C) increasing marginal costs.
    (D) decreasing average fixed costs.

20. Marginal cost is _____ average variable cost when _____.
    (A) equal to; average total cost is minimized
    (B) less than; total cost is maximized
    (C) greater than; average fixed cost is minimized
    (D) equal to; average variable cost is minimized.

Question #1

a. Write down the formula for meaning the price elasticity of supply

$E(S) = \frac{Q_2 - Q_1}{Q_2 + Q_1} \div \frac{P_2 - P_1}{P_2 + P_1}$

4/5

b. Suppose the price of Apples goes up from $10 to $12 a box. Ahmad farms supplies 2000 boxes of Apples instead (بدلاً من) of 1800 boxes. Compute the coefficient (قيمة) of price elasticity "midpoints approach" for Ahmad's supply. ***Is its supply elastic or it inelastic?***

$\frac{Q_2 - Q_1}{Q_2 + Q_1} \div \frac{P_2 - P_1}{P_2 + P_1}$

$\frac{2000 - 1800}{2000 + 1800} \div \frac{12 - 10}{12 + 10} = \frac{200}{3800} \times \frac{22}{2} = \frac{44}{76} = 0.578$

$\frac{0.095}{0.181}$

0.578 < 1 Supply inelastic

Question #2

The following table gives total output or total product as a function of labor unit used

Number of labor	Total product (output)	Average product of labor
0	0	—
1	8	8
2	15	7.5
3	21	7
4	26	6.5
5	30	6

MPL

3/5

a. Calculate the average productivity of labor from the information given in the above table

b. Define the law of diminishing returns

As what we see in the table for extra labor the Average products of labor will decrease

c. Does the table indicate (تشير) a situation of diminishing returns? Explain your answer

No Because the table indicate that we have diminishing returns that the each more labor gives lees Average products of labor same have an effects of labor the returns on diminishing

Question #3

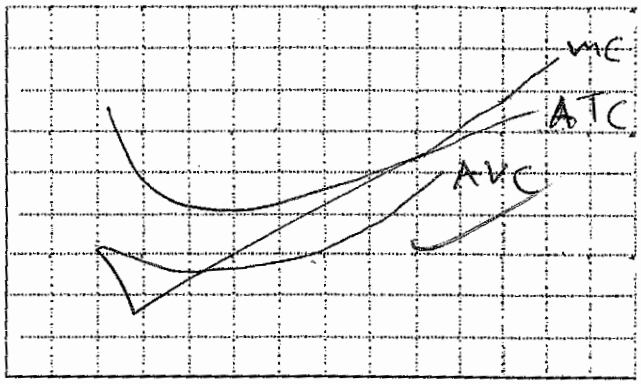
A firm's cost curves are given in the following table:

Total product (Q)	Variable cost	Total cost	AVC	ATC	MC
0	0	50	—	—	—
1	15	65	15	65	15
2	26	76	13	38	11
3	31	81	10.33	27	5
4	36	86	9	21.5	5
5	40	90	8	18	4

a. Complete the table

b. Graph (ارسم) AVC, ATC, and MC on the same graph (في نفس الرسمة), what is the relationship between the MP curve and AVC curve

when the mp increase that means the AP increase → AVC decrease



Question #4

Assume that Jamil has $20 to spend on good X and good Y, the price of X is $2 while price of Y is $4. Jamil's preferences for X and Y are summarized in the following table:

Unit of X	Total utility of X	MUX		Units of Y	Total utility of Y	MUY	
1	20	20	10	1	48	48	12
2	36	16	8	2	88	40	10
3	50	14	7	3	124	36	9
4	62	12	6	4	156	32	8
5	72	10	5	5	180	24	6
6	80	8	4	6	192	12	3
7	86	6	3	7	200	8	2

a. Fill in the table for marginal utility for both X and Y

b. Are these preferences consistent (يتبع) with the law of diminishing marginal utility? Explain briefly (وضح إجابتك بإيجاز)

Yes, because as we see the utility for extra unit of X and Y there both are decrease, so the first unit will give the maximum utility then the second unit less and the third less and

c. What quantities of good X and good Y will maximize Jamil's level of satisfaction (utility)?

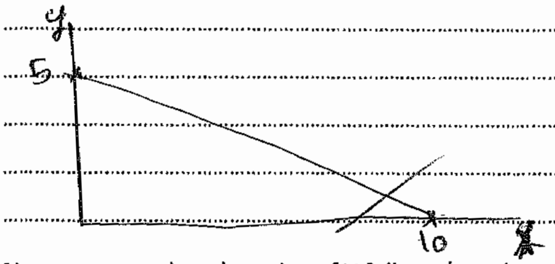
A	2 unit of X and 4 of Y	8	2×2+4×4 = 20	غير ممكن
B	4 of X and 5 of Y	6	4×2+5×4 = 28	X غير ممكن
C	7 of X and 6 of Y	3	7×2+6×4 = 38	غير ممكن

Maximum satisfaction when he use 2 unit of X and 4 unit of Y

d. What conditions are satisfied in part c?

Condition A will satisfied because the mu per dollar for X equal mu per dollar for Y = 8 and Jamil's will spend all income to purchase the 2 unit of X 4 unit of Y = $20 = Jamil's income

e. Draw (ارسم) the budget line and identify its slope



slope = $\frac{P_Y}{P_X}$ = $\frac{4}{2}$ = −2

P_Y / P_X = −1/2

f. Now suppose that the price of Y falls to $2, what quantities of good X and good Y will Jamil purchase to maximize satisfaction (utility)?

mu per $ X	mu per $ Y
8	20
7	18
6	16
5	12
4	6
1	4

→

A	4 unit of X 6 unit of Y	6	4×2+6×2 = 20	ممكن
B	6 unit of X 7 unit of Y	4	6×2+7×2 = 26	X غير ممكن

purchase 4 unit of X 6 unit of Y

g. If you calculated correctly, you have found (تجد) that a decrease in the price of good Y has caused Jamil to buy more quantities of X and Y. How can this be explained (كيف تفسر إجابتك)?

when the price of Y decrease we don't need all the income to purchase the quantity so we have more money from income that we can purchase more units of X and Y

4 = $4 → 2 of X 4 of Y = 20 → 4 = $2 2X + 4Y = 12 $ that means we have $8 extra that we can purchase more units
X = $2 X = $2

95

57/100

Economics Department

Economics 131

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SECOND EXAM First Semester 2012/2013

ANSWER SHEET

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

26

Question # 1: Multiple Choices.

Choose the one alternative that best completes the statement or answers the question.

1. The income elasticity of demand for education (للتعليم) is 3.5. Thus, a 4% increase in income will
   (A) decrease the quantity of education demanded by 3.5%
   (B) decrease the quantity of education demanded by 14%
   (C) increase the quantity of education demanded by 4%
   (D) increase the quantity of education demanded by 14%

$E_i = \frac{\Delta Q}{4} = 3.5$
$= 14$ inc

2. If the quantity demanded of peanut butter (زبدة الفستق) increases by 4% when the price of jelly decreases by 2%, the cross-price elasticity of demand between peanut butter and jelly is
   (A) -4
   (B) -2
   (C) -0.5
   (D) 2

$E_{xy} = \frac{\Delta Q_x}{\Delta P_y} = \frac{+4}{-2} = -2$

3. Rami is consuming X and Y so that he is spending his entire (كامل) income and $\frac{MUx}{Px} = 6$, and $\frac{MUy}{Py} = 10$. To maximize utility, he should
   (A) continue to consume the same amount of X and Y since he is already maximizing utility
   (B) consume less of both X and Y
   (C) consume more X and less Y
   (D) consume less X and more Y

4. If $\frac{MUx}{Px} < \frac{MUy}{Py}$, then
   (A) spending a dollar less on Y and a dollar more on X increases utility
   (B) spending a dollar less on X and a dollar more on Y increases utility
   (C) X is more expensive than Y
   (D) Y is more expensive than X

5. The marginal utility of the first cup of coffee that Tamer drinks in the morning is worth $2.00. The marginal utility of the 9th cup of coffee he drinks is positive while the marginal utility of the 10th cup of coffee he drinks in the morning is worth $0. This implies that at a price of $0, Tamer would drink
   (A) zero cups of coffee per morning
   (B) at most 10 cups of coffee per morning
   (C) more than 10 cups of coffee per morning, but the actual number is indeterminate from this information
   (D) an infinite number of cups of coffee each morning

① MU = 2
⑨ MU = +
⑩ MU = zero

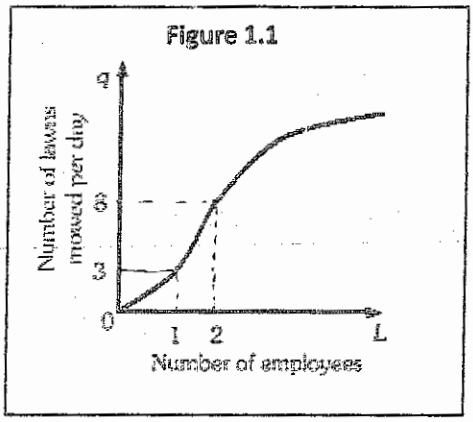
6. The law of diminishing marginal utility refers to
   (A) a consumer's decrease in total satisfaction as she consumes more units of a good
   (B) a consumer's decrease in additional satisfaction as she consumes more and more units of a good
   (C) the idea that total utility is negative
   (D) the idea that marginal utility is negative

7. A rise in the price of Pepsi that causes a household to shift its purchasing pattern toward (يغير انماط الاستهلاك باتجاه) Coke and away from Pepsi is the _____ effect of a price change.
   (A) income
   (B) substitution
   (C) complementary
   (D) diminishing marginal utility

8. In the long run,
   (A) a firm can shut down, but it cannot exit the industry
   (B) there are no fixed factors of production
   (C) a firm can vary (يغير) all inputs, but it cannot change the mix of inputs it uses
   (D) all firms must make economic profits

Refer to the information provided in Figure 1.1 below to answer the questions 9, and 10.

Figure 1.1

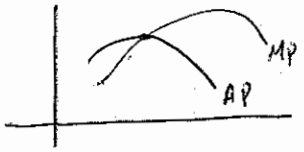


9. Refer to Figure 1.1 .The marginal product of the second worker is _____ lawns moved.
   (A) 3
   (B) 5
   (C) 8
   (D) 11

10. Refer to Figure 1.1. The average product of the second worker is _____ lawns moved.
   (A) 4
   (B) 5
   (C) 5.5
   (D) 11

$AP = \frac{TP}{L} = \frac{8}{2}$

11. If marginal product is greater than average product, then
   (A) average product must be decreasing
   (B) marginal product must be decreasing
   (C) marginal product must be increasing
   (D) marginal product could either be increasing or decreasing



12. Assume the total product of two workers is 100 and the total product of three workers is 120. The average product of the third worker is _____, and the marginal product of the third worker is _____.
   (A) 40; 20
   (B) 20; 100
   (C) 13.33; 6.67
   (D) 120; 100

$TP_2 = 100$
$TP_3 = 120$

2	100
3	120

$MP = \frac{TP}{Q}$

$AP = \frac{\Delta TP}{\Delta Q}$

13. At the point where total product is maximized, marginal product
   (A) is zero, but average product is still (يبقى) positive
   (B) and average product are negative
   (C) is positive, but average product is negative
   (D) and average product are positive

14. If we assume that labor is the only variable input, the slope of the total product curve in the short run
    (A) has no economic significance(ليس له أهمية اقتصادية)
    (B) measures the average product of labor
    (C) measures the marginal product of labor
    (D) measures both the marginal and average product at all points on the total product curve

15. The Farley Farm, a dairy company, has total costs of $15,000 and total variable costs of $2,000. The Farley Farm's total fixed costs are
    (A) $0
    (B) $13,000
    (C) $17,000
    (D) Indeterminate(لا استطيع التحديد) because the firm's output level is not known

$TC = TVC + TFC$

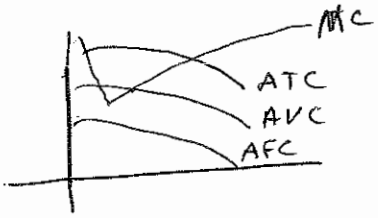
16. A firm will begin to experience diminishing returns at the point where
    (A) marginal cost increases
    (B) marginal cost decreases
    (C) marginal product increases
    (D) Both B and C

17. Wilbur's Widgets, a widget company, produces 100 widgets. Its average fixed cost is $5 and its total variable cost is $300. What is the total cost of producing 100 widgets?
    (A) $300
    (B) $305
    (C) $500
    (D) $800

$AFC = 5\$$
$TVC = 300\$$
$AFC = \frac{TFC}{\#L} \Rightarrow TFC = 5 * 100 = 500$
$TC = TFC + TVC = 300 + 500 = 800$

18. Diminishing marginal returns implies
    (A) decreasing average variable costs
    (B) decreasing marginal costs
    (C) increasing marginal costs
    (D) decreasing average fixed costs

19. Marginal cost is _____ average variable cost when _____.
    (A) equal to; average total cost is minimized
    (B) less than; total cost is maximized
    (C) greater than; average fixed cost is minimized
    (D) equal to; average variable cost is minimized



20. The diamond/water paradox (متناقضة) states that things with the _____ value in use (قيمة الاستهلاك) frequently have _____ value in exchange (قيمة التبادل).
    (A) least; the least
    (B) least; little or no
    (C) greatest; little or no
    (D) greatest; the greatest

Question #1

3/10

$AP = \frac{TP}{\#L}$

The following table gives total output or total product as a function of labor unit used

Number of labor	Total product (output)	Average product of labor
0	0	0
1	5	5/1 = 5
2	9	9/2 = 4.5
3	12	12/3 = 4
4	14	14/4 = 3.5
5	15	15/5 = 3

a. Calculate the average productivity of labor from the information given in the above table في الجدول

b. Define the law of diminishing returns

عندما استخدام وحدات متتالية من سلعة أو خدمة ما يؤدي لتقليل كمية الانتاج

c. Does the table indicate (تشير) a situation of diminishing returns? Explain your answer

Yes,

لأنه كلما زادت وحدة جديدة (New labor) يقل (Average product of labor)

على سبيل المثال الانتقال من labor 1 → labor 2 ← يقل (Avg product) 5 → 4.5

Question #2

A firm's cost curves are given in the following table:

$ATC = AVC + AFC$

$\frac{\Delta TC}{\Delta Q}$ $MC = \frac{\Delta TC}{\Delta Q}$

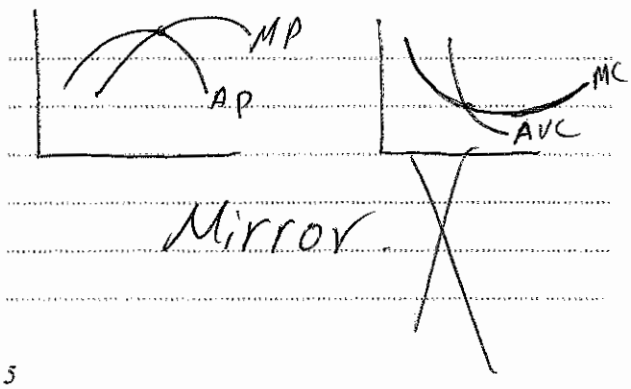
Total product (Q)	Variable cost	Total cost	AVC	ATC	MC
0	0	100	—	—	—
1	30	130	130 (30)	130	30
2	50	150	75	75	20
3	59	159	53	53	9
4	72	172	43	43	13
5	88	188	37.6	37.6	15

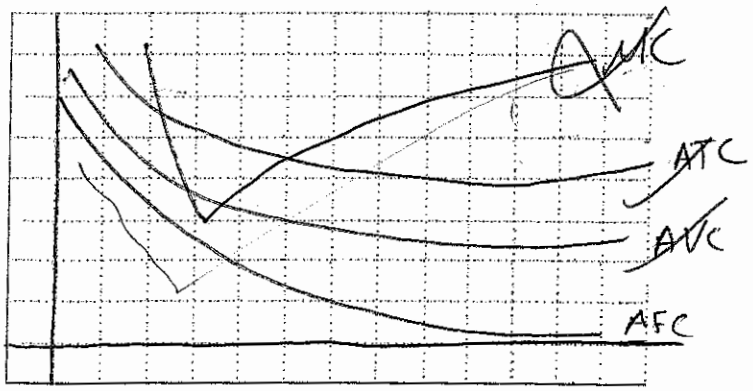
$ATC = \frac{TC}{Q}$

$AVC = \frac{VC}{Q}$

a. Complete the table

b. Graph (ارسم) AVC, ATC, and MC on the same graph (في نفس الرسمة), what is the relationship between the MP curve and AVC curve





$\frac{x - 172}{1} = 15$

Question #3

a. Write down the formula for meaning the price elasticity of supply

$$E_S = \frac{\Delta Q_S}{\Delta P_S} = \frac{Q_2 - Q_1}{Q_2 + Q_1} \div \frac{P_2 - P_1}{P_2 + P_1}$$

$$E_S = \frac{Q_2 - Q_1}{Q_2 + Q_1} * \frac{P_2 + P_1}{P_2 - P_1}$$

b. Suppose the price of Apples goes up from $20 to $22 a box. Ahmad farms supplies 1200 boxes of Apples instead (بدلاً من) of 1000 boxes. Compute the coefficient (قيمة) of price elasticity "midpoints approach" for Ahmad's supply. ***Is its supply elastic or it inelastic?***

Prise 20$ → 22$ Q_2 1200 Q_1 = 1000

$$E_S = \frac{1200 - 1000}{1200 + 1000} * \frac{22 + 20}{22 - 20} = \frac{200}{2200} * \frac{42}{2}$$

$E_S = 1.9 > 1 \Rightarrow$ supply is elastic

Question #4

Assume that Jamil has $10 to spend on good X and good Y, the price of X is $1 while price of Y is $2. Jamil's preferences for X and Y are summarized in the following table:

Unit of X	Total utility of X	MUX	MU Per $ For X	Units of Y	Total utility of Y	MUY	MU Per $ For Y
1	10	10/1 =10	10	1	24	24	12
2	18	9	9	2	44	22	11
3	25	8.3	8.3	3	62	20.67	10.3
4	31	7.75	7.75	4	78	19.5	9.75
5	36	7.2	7.2	5	90	18	9
6	40	6.67	6.67	6	96	16	8
7	43	6.1	6.1	7	100	14.3	7.15

$I = 10\$$

$P_X = 1\$$

$P_Y = 2\$$

$MU_X = \frac{TU_X}{\#unit_X}$

$MU_Y = \frac{TU_Y}{P_Y \#unit_Y}$

a. Fill in the table for marginal utility for both X and Y

b. Are these preferences consistent (يتبع) with the law of diminishing marginal utility? Explain briefly (وضح إجابتك بإيجاز)

yes,

زاد عند استهلاك وحدة إضافية من السلعتين سواء كانت X أو Y تقل المنفعة الكلية لتلك السلعة باستمرار الاستهلاك

c. What quantities of good X and good Y will maximize Jamil's level of satisfaction (utility)?

خلق الصنعة

at 2 unit of X and 5 unit of Y

X=1 + Y=3	$(P_X X) + (P_Y Y)$
X=2 + Y=5	$(1 \times 1) + (3 \times 2) = 7$ لا يستهلك
X=3 + Y=6	$(2 \times 1) + (5 \times 2) = 12$
X=5 + Y=7	

at 2 units of X and 5 units of Y

$MU_x = MU_y$	$P_x X + P_y Y$
$x=1 \quad y=3$	$1+6=7$ ✗
$x=2 \quad y=4$	$2+8=10$ ✓
$x=2 \quad y=5$	$2+10=12$ ✗
$x=3 \quad y=6$	$3+12=15$ ✗
$x=5 \quad y=7$	$5+14=19$ ✗

So at

$x=2$ & $y=4$

d. What conditions are satisfied in part c?

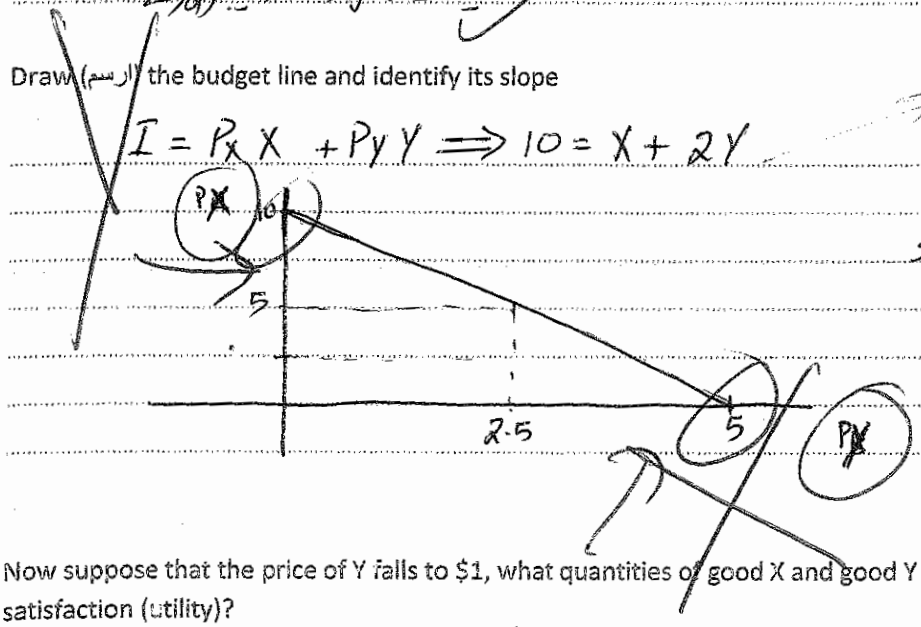
1) $MU_x = MU_y$

2) نفقت كامل دخله واستطاع

e. Draw (ارسم) the budget line and identify its slope

$I = P_x X + P_y Y \Rightarrow 10 = X + 2Y$

$\Rightarrow Y = \frac{10}{2} - \frac{1}{2}X$



$slope = -\frac{P_x}{P_y}$

$= -\frac{1}{2}$

$slope = \frac{P_x}{P_y} = \frac{1}{2}$

f. Now suppose that the price of Y falls to \$1, what quantities of good X and good Y will Jamil purchase to maximize satisfaction (utility)?

$P_y (new) = 1$

X	TU_x	MU_x	Y	TU_y	MU_y	MU_x	MU_y
1	10	10	1	24	24	10	24
2	18	9	2	44	22	9	22
3	25	8-3	3	62	20-67	8-3	20-67
4	31	7-75	4	78	19-5	7-75	19-5
5	36	7-2	5	90	18	7-2	18
6	40	6-67	6	96	16	6-67	16
7	43	6-1	7	100	14-3	6-1	14-3

at $X = 3$

$Y = 7$

$(3*1) + (7*1) = 10$

g. If you calculated correctly, you have found (وجدت) that a decrease in the price of good Y has caused Jamil to buy more quantities of X and Y. How can this be explained (كيف تفسر إجابتك)?

عندما انخفض سعر السلعة Y أصبح لدى جميل فائض في الدخل حيث أصبح

$(2*1) + (4*1) = 6$

وبالتالي أصبح لديه surplus يستطيع أن ينفقه على شراء السلعتين

10

Economics Department

Economics 131

Check Your Instructors name

Instructors: Dr. Said Haifa (Coordinator) ( )

Mr. Mohammad Amreyeh ( )

Miss Shireen Basha ( )

Student Name: Diala Jarrar Student Number: 1101799

SECOND EXAM First Semester 2012/2013

ANSWER SHEET

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

Question # 1: Multiple Choices.

Choose the one alternative that best completes the statement or answers the question.

1. The income elasticity of demand for education (للتعليم) is 3.5. Thus, a 4% increase in income will
   (A) decrease the quantity of education demanded by 3.5%
   (B) decrease the quantity of education demanded by 14%
   (C) increase the quantity of education demanded by 4%
   (D) increase the quantity of education demanded by 14%

2. If the quantity demanded of peanut butter (زبدة الفستق) increases by 4% when the price of jelly decreases by 2%, the cross-price elasticity of demand between peanut butter and jelly is
   (A) -4
   (B) -2
   (C) -0.5
   (D) 2

3. Rami is consuming X and Y so that he is spending his entire (كامل) income and $\frac{MUx}{Px} = 6$, and $\frac{MUy}{Py} = 10$. To maximize utility, he should
   (A) continue to consume the same amount of X and Y since he is already maximizing utility
   (B) consume less of both X and Y
   (C) consume more X and less Y
   (D) consume less X and more Y

4. If $\frac{MUx}{Px} < \frac{MUy}{Py}$, then
   (A) spending a dollar less on Y and a dollar more on X increases utility
   (B) spending a dollar less on X and a dollar more on Y increases utility
   (C) X is more expensive than Y
   (D) Y is more expensive than X

5. The marginal utility of the first cup of coffee that Tamer drinks in the morning is worth $2.00. The marginal utility of the 9th cup of coffee he drinks is positive while the marginal utility of the 10th cup of coffee he drinks in the morning is worth $0. This implies that at a price of $0, Tamer would drink
   (A) zero cups of coffee per morning
   (B) at most 10 cups of coffee per morning
   (C) more than 10 cups of coffee per morning, but the actual number is indeterminate from this information
   (D) an infinite number of cups of coffee each morning

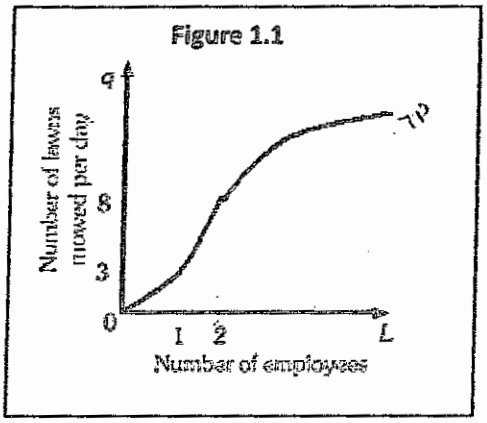
6. The law of diminishing marginal utility refers to
   (A) a consumer's decrease in total satisfaction as she consumes more units of a good
   (B) a consumer's decrease in additional satisfaction as she consumes more and more units of a good
   (C) the idea that total utility is negative
   (D) the idea that marginal utility is negative

7. A rise in the price of Pepsi that causes a household to shift its purchasing pattern toward (يغير انماط الاستهلاك باتجاه) Coke and away from Pepsi is the _____ effect of a price change.
   (A) income
   (B) substitution
   (C) complementary
   (D) diminishing marginal utility

8. In the long run,
   (A) a firm can shut down, but it cannot exit the industry
   (B) there are no fixed factors of production
   (C) a firm can vary (يغير) all inputs, but it cannot change the mix of inputs it uses
   (D) all firms must make economic profits

Refer to the information provided in Figure 1.1 below to answer the questions 9, and 10.

Figure 1.1

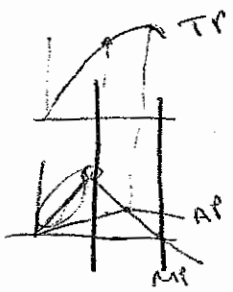


9. Refer to Figure 1.1 .The marginal product of the second worker is _____ lawns moved.
   (A) 3
   (B) 5
   (C) 8
   (D) 11

$MP = \frac{\Delta TP}{\Delta L} \Rightarrow \frac{8-3}{2-1} = 5$

10. Refer to Figure 1.1. The average product of the second worker is _____ lawns moved.
   (A) 4
   (B) 5
   (C) 5.5
   (D) 11

$AP = \frac{TP}{L} = \frac{8}{2} = 4$



11. If marginal product is greater than average product, then
   (A) average product must be decreasing
   (B) marginal product must be decreasing
   (C) marginal product must be increasing
   (D) marginal product could either be increasing or decreasing

$MP > AP$

12. Assume the total product of two workers is 100 and the total product of three workers is 120. The average product of the third worker is _____, and the marginal product of the third worker is _____.
   (A) 40; 20
   (B) 20; 100
   (C) 13.33; 6.67
   (D) 120; 100

$TP_2 = 100$
$TP_3 = 120$
$AP_3 = ?? = \frac{TP}{L}$
$MP_3 = ?$
$MP_3 = \frac{\Delta TP}{\Delta Q} \Rightarrow \frac{120-100}{3-2} = 20$

13. At the point where total product is maximized, marginal product
   (A) is zero, but average product is still (يبقى) positive
   (B) and average product are negative
   (C) is positive, but average product is negative
   (D) and average product are positive

TP
$AP = \frac{TP}{L}$
$\Rightarrow 40 = \frac{TP}{3}$ (120)

14. If we assume that labor is the only variable input, the slope of the total product curve in the short run
(A) has no economic significance(ليس له أهمية اقتصادية)
(B) measures the average product of labor
(C) measures the marginal product of labor
(D) measures both the marginal and average product at all points on the total product curve

Slope = $\frac{\Delta TP}{\Delta L}$ ⇒ MP

15. The Farley Farm, a dairy company, has total costs of $15,000 and total variable costs of $2,000. The Farley Farm's total fixed costs are
(A) $0
(B) $13,000
(C) $17,000
(D) Indeterminate(لا استطيع التحديد) because the firm's output level is not known

TC = 15000
VC = 2000
TFC = B.

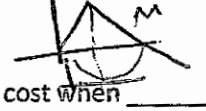
16. A firm will begin to experience diminishing returns at the point where
(A) marginal cost increases
(B) marginal cost decreases
(C) marginal product increases
(D) Both B and C

$AFC = \frac{FC}{Q} \Rightarrow 5 = \frac{FC}{100} \Rightarrow FC = 500$

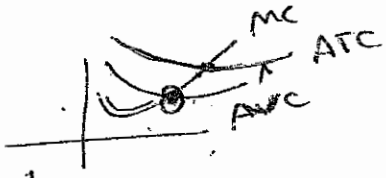
17. Wilbur's Widgets, a widget company, produces 100 widgets. Its average fixed cost is $5 and its total variable cost is $300. What is the total cost of producing 100 widgets?
(A) $300
(B) $305
(C) $500
(D) $800

100, AFC = 5, TVC = 300
TC = 300 ??
$AFC = \frac{TFC}{Q} \Rightarrow 5 = \frac{TFC}{100} \Rightarrow 500$
TVC = 300

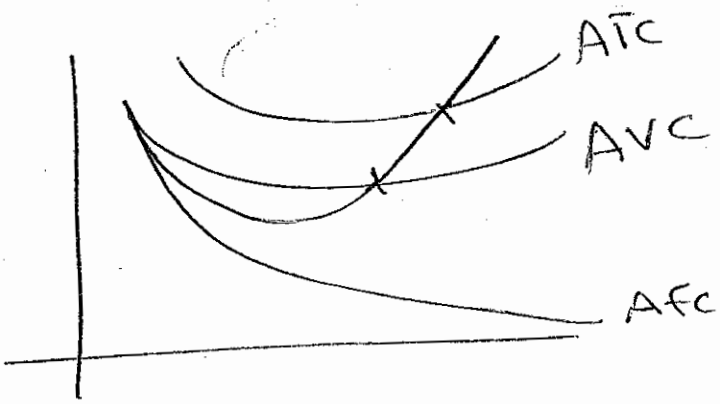
18. Diminishing marginal returns implies
(A) decreasing average variable costs
(B) decreasing marginal costs
(C) increasing marginal costs
(D) decreasing average fixed costs



19. Marginal cost is _____ average variable cost when _____.
(A) equal to; average total cost is minimized
(B) less than; total cost is maximized
(C) greater than; average fixed cost is minimized
(D) equal to; average variable cost is minimized



20. The diamond/water paradox (متناقضة) states that things with the _____ value in use (قيمة الاستهلاك) frequently have _____ value in exchange (قيمة التبادل).
(A) least; the least
(B) least; little or no
(C) greatest; little or no
(D) greatest; the greatest



Question #1

The following table gives total output or total product as a function of labor unit used

Number of labor	Total product (output)	Average product of labor	MP
0	0	0	—
1	5	5	5
2	9	4.5	4
3	12	4	3
4	14	3.5	2
5	15	3	1

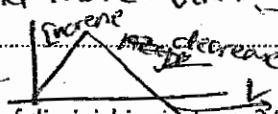
$AP_L = \frac{TP}{L}$

a. Calculate the average productivity of labor from the information given in the above table

b. Define the law of diminishing returns

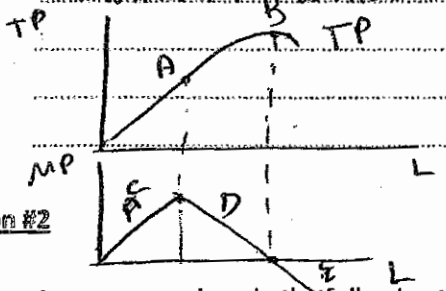
law of diminishing returns: The extra or additional units of inputs of producing more and more units of a product then its tart to decrease of MP then it become a negative reason for firm

$\Rightarrow MP = \frac{\Delta TP}{\Delta L}$



c. Does the table indicate (تشير) a situation of diminishing returns? Explain your answer

when TP is max → MP → start decreasing at point C (increasing returns)
D (decreasing/diminishing Ref.)
E (negative return



Question #2

A firm's cost curves are given in the following table:

$ATC = \frac{TC}{Q} \Rightarrow 75 = \frac{TC}{2} \Rightarrow TC = 150$

$\Rightarrow 53 \times 3 =$

FC	Total product (Q)	Variable cost	Total cost	AVC	ATC	MC
100	0	~~100~~ 0	100	—	—	—
100	1	30	130	30	120	30
100	2	50	150	25	75	20
100	3	59	159	19.6	53	9
100	4	72	172	18	43	13
100	5	87	187	17.4	37.4	15

$130 = 100 + VC$

a. Complete the table

b. Graph (ارسم) AVC, ATC, and MC on the same graph (في نفس الرسمة), what is the relationship between the MP curve and AVC curve

$TC = TVC + FC$ | $MC = \frac{\Delta TC}{\Delta Q}$

$AVC = \frac{VC}{Q}$

$\Rightarrow 13 = \frac{\Delta TC}{4-3} \Rightarrow B$

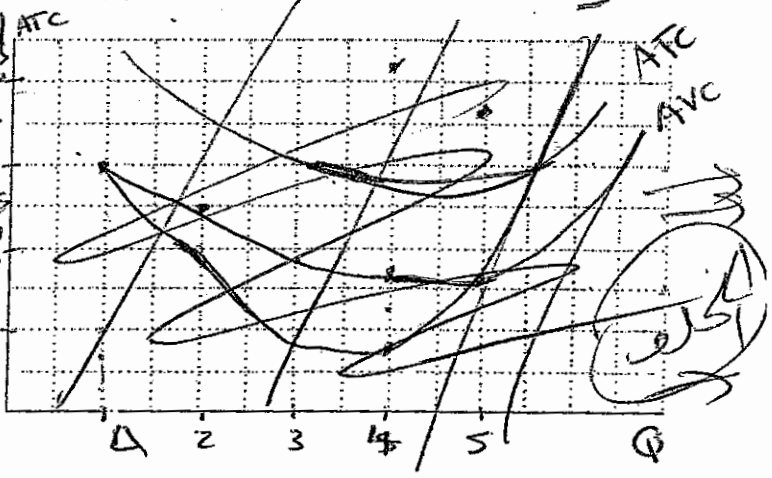
$\Delta TC = 13$

$13 = TC_2 - 159$

$TC = 172$

$15 = \frac{\Delta TC}{1} \Rightarrow 15$

$15 = TC_2 - 172$



MC intersect both of Avc, ∴ ATC at

Question #3

a. Write down the formula for meaning the price elasticity of supply

Price elasticity of supply is the percentage change in the Quantity supplied of a product x with the percentage change in its price

$\mathcal{E}_s = \frac{\% Q_d}{\% P_x} \Rightarrow \mathcal{E}_s = \frac{Q_{x_2} - Q_{x_1}}{P_{x_2} - P_{x_1}} * \frac{P_{x_1} + P_{x_2}}{Q_{x_1} + Q_{x_2}}$

b. Suppose the price of Apples goes up from \$20 to \$22 a box. Ahmad farms supplies 1200 boxes of Apples instead (بدلا من) of 1000 boxes. Compute the coefficient (قيمة) of price elasticity "midpoints approach" for Ahmad's supply. ***Is its supply elastic or it inelastic?***

P ↑ (20 → 22) midpoint

S ↓ (1200 → 1000) $\mathcal{E}_s = \frac{Q_{x_2} - Q_{x_1}}{P_{x_2} - P_{x_1}} * \frac{(P_{x_1} + P_{x_2})/2}{(Q_{x_1} + Q_{x_2})/2}$

$\rightarrow \left(\frac{1000 - 1200}{22 - 20}\right)\left(\frac{42/2}{2200/2}\right)$

$\Rightarrow \left(\frac{-200}{2}\right)\left(\frac{21}{1100}\right) = |-1.9| = 1.9 > 1$ (elastic).

Question #4

Assume that Jamil has \$10 to spend on good X and good Y, the price of X is \$1 while price of Y is \$2. Jamil's preferences for X and Y are summarized in the following table: $MU = \frac{TU}{Q}$ $MU_x = \frac{\Delta TU}{\Delta Q}$

Unit of X	Total utility of X	MUX	Mu per \$ MUX/Px	Units of Y	Total utility of Y	MUY	Mu per \$ MuY/Py	Py = 1 MuY/Py
1	10	10	(10)	1	24	24	12	24
2	18	8	(8)	2	44	20	(10)	20
3	25	7	7	3	62	18	9	18
4	31	6	(6)	4	78	16	(8)	16
5	36	5	5	5	90	12	(6)	12
6	40	4	4	6	96	6	(3)	6
7	43	3	(3)	7	100	4	2	4

a. Fill in the table for marginal utility for both X and Y

b. Are these preferences consistent (يتبع) with the law of diminishing marginal utility? Explain briefly (وضح إجابتك بإيجاز)

law of diminishing marginal utility: The additional or extra units

(تنخفض المنفعة الحدية كلما زاد الاستهلاك)

(a Consumer's decrease in additional satisfaction on consume more and more units of a good

c. What quantities of good X and good Y will maximize Jamil's level of satisfaction (utility)?

Group	Collection	units	$P_xX + P_yY = I$
A	10	X = 1, Y = 2	1*1 + 2*2 = 5 ≠ 10 ✗
B	8	X = 2, Y = 4	2*1 + 4*2 = 10 ✓ = 10
C	6	X = 4, Y = 5	4*1 + 5*2 = 14 ≠ 10 ✗
D	3	X = 7, Y = 6	7*1 + 6*2 = 12 + 7 = 19 ≠ 10 ✗

X = 2, Y = 4 equilibrium

d. What conditions are satisfied in part c?

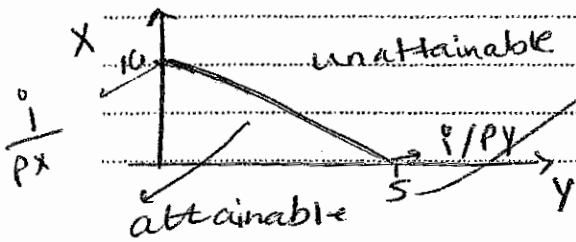
(1) $P_X X + P_Y Y = \text{income}$

(2) $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$ (marginal utility per $1)

e. Draw (ارسم) the budget line and identify its slope

$P_X X + P_Y Y = i$, at $P_X = 1$, $Y = 0$

$\Rightarrow 1X + 0 = 10 \rightarrow \boxed{X = 10}$, $0 + 2Y = 10 \rightarrow \boxed{Y = 5}$



$\text{Slope} = \frac{-X}{Y} \Rightarrow \frac{-10}{5} = -2$

f. Now suppose that the price of Y falls to $1, what quantities of good X and good Y will Jamil purchase to maximize satisfaction (utility)?

جدول

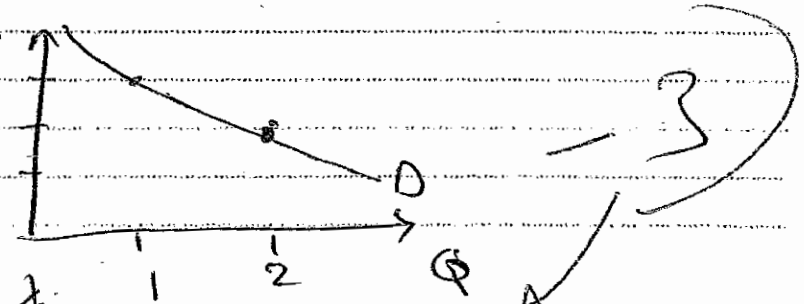
Group	Collection	units	$P_X X + P_Y Y = i$
A	6	$X = 4, Y = 6$	$4 \cdot 1 + 6 \cdot 1 = 10 = 10$ ✓ $= i$
B	4	$X = 6, Y = 7$	$6 \cdot 1 + 7 \cdot 1 = 13 \neq 10$ ✗

$X = 4$

$Y = 6$

g. If you calculated correctly, you have found (تجد) that a decrease in the price of good Y has caused Jamil to buy more quantities of X and Y. How can this be explained (كيف تفسر إجابتك)?

P_Y	Quantity Y
2	4
1	6



This can be derived the demand curve

as $P_Y \downarrow \rightarrow Q_Y \uparrow$

and can explain the substitution effect

$\Rightarrow P_X \downarrow P_Y \downarrow \rightarrow Q_X \downarrow Q_Y \uparrow$

Economics Department

Economics 131

90

85/100

Check Your Instructors name

Instructors: Dr. Riyad Musa (Coordinator) (✓)

Dr. Yousef Nasser ( )

Miss. Hadil Kreitem ( )

Miss Shireen Basha ( )

Student Name: Wala' Zuhair alhroub Student Number: 1130385

Second EXAM Second Semester 2013/2014

ANSWER SHEET

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D

21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D

17.5 - 2.5 = 15

85

PART ONE: MULTIPLE CHOICE (60 POINTS)

1. Marginal utility can be:
A. positive, but not negative.
B. positive or negative, but not zero.
C. positive, negative, or zero.
D. decreasing, but not negative.

Units Consumed	Total Utility	Marginal Utility
0	0	-
1	W	20
2	35	X
3	Y	10
4	40	Z

2. Refer to the above data. The value for Y is:
A. 25.
B. 30.
C. 40.
D. 45.

3. The theory of consumer behavior assumes that:
A. consumers behave rationally, attempting to maximize their satisfaction.
B. consumers have unlimited money incomes.
C. consumers do not know how much marginal utility they obtain from successive units(وحدات متتالية) of various products.
D. marginal utility is constant.

4. To maximize utility a consumer should allocate money income so that the:
A. elasticity of demand on all products purchased is the same.
B. marginal utility obtained from the last dollar spent on each product is the same.
C. total utility derived from each product consumed is the same.
D. marginal utility of the last unit of each product consumed is the same.

5. Suppose that MU_x/P_x exceeds MU_y/P_y. To maximize utility the consumer who is spending all her money income should buy:
A. less of X only if its price rises.
B. more of Y only if its price rises.
C. more of Y and less of X.
D. more of X and less of Y.

Units of J	MU_J	Units of K	MU_K
1	56	1	32
2	48	2	28
3	32	3	24
4	24	4	20
5	20	5	12
6	16	6	10
7	12	7	8

6. Refer to the above data. If the consumer has a money income of $52 and the prices of J and K are $8 and $4 respectively, the consumer will maximize her utility by purchasing:

A. 2 units of J and 7 units of K.
B. 5 units of J and 5 units of K.
C. 4 units of J and 5 units of K.
D. 6 units of J and 3 units of K.

7. An increase in the price of product A will:

A. increase the marginal utility per dollar spent on A.
B. decrease the marginal utility per dollar spent on A.
C. not affect the marginal utility per dollar spent on A.
D. cause utility-maximizing consumers to buy more of A.

8. The theory of consumer behavior assumes that consumers attempt to maximize:

A. the difference between total and marginal utility.
B. total utility.
C. average utility.
D. marginal utility.

9. Diminishing marginal utility explains why:

A. the income effect exceeds the substitution effect.
B. the substitution effect exceeds the income effect.
C. supply curves are upsloping.
D. demand curves are downsloping.

10. At each point on an indifference curve:

A. money income is the same.
B. the prices of the two products are the same.
C. total utility is the same.
D. marginal utility is the same.

11. Which of the following definitions is *correct*?

A. Accounting profit + economic profit = normal profit.
B. Economic profit − accounting profit = explicit costs.
C. Economic profit = accounting profit − implicit costs.
D. Economic profit − implicit costs = accounting profits.

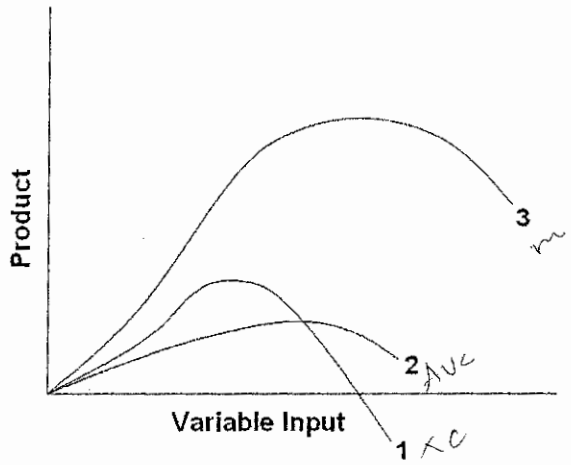
12. To economists, the main difference between the short run and the long run is that:
A. the law of diminishing returns applies in the long run, but not in the short run.
B. in the long run all resources are variable, while in the short run at least one resource is fixed.
C. fixed costs are more important to decision making in the long run than they are in the short run.
D. in the short run all resources are fixed, while in the long run all resources are variable.

13. Marginal product is:
A. the increase in total output attributable(تعزى) to the employment of one more worker.
B. the increase in total revenue attributable to the employment of one more worker.
C. the increase in total cost attributable to the employment of one more worker.
D. total product divided by the number of workers employed.

14. Which of the following statements concerning the relationships between total product (TP), average product (AP), and marginal product (MP) is *not* correct? $AP = \frac{TP}{Q}$
A. AP continues to rise so long as TP is rising.
B. AP reaches a maximum before TP reaches a maximum.
C. TP reaches a maximum when the MP of the variable input becomes zero.
D. MP cuts AP at the maximum AP.

15. Marginal product:
A. diminishes at all levels of production.
B. may initially increase, then diminish, but never become negative.
C. may initially increase, then diminish, and ultimately become negative.
D. is always less than average product.

16. If a variable input is added to some fixed input, beyond some point the resulting extra output will decline. This statement describes:
A. economies and diseconomies of scale.
B. X-inefficiency.
C. the law of diminishing returns.
D. the law of diminishing marginal utility.



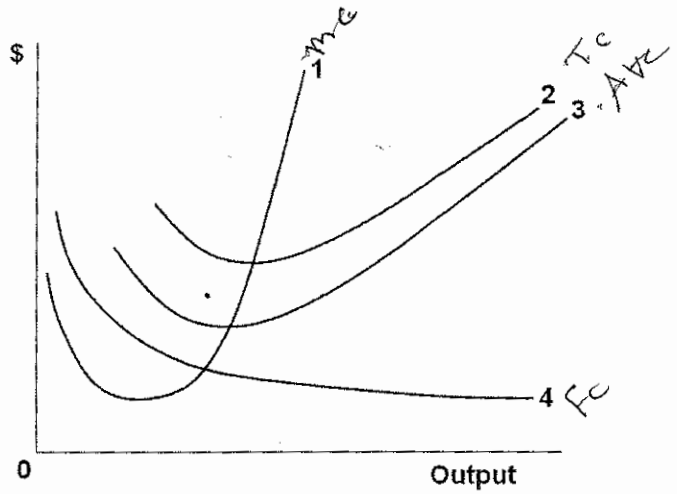
17. In the above diagram curves 1, 2, and 3 represent the:
A. average, marginal, and total product curves respectively(على التوالي).
B. marginal, average, and total product curves respectively.
C. total, average, and marginal product curves respectively.
D. total, marginal, and average product curves respectively.

18. Fixed cost is:
A. the cost of producing one more unit of capital, for example, machinery.
B. any cost which does not change when the firm changes its output.
C. average cost multiplied by the firm's output.
D. usually zero in the short run.

19. If you operated a small bakery, which of the following would be a variable cost in the short run?
A. baking ovens
B. interest on business loans
C. annual lease payment for use of the building
D. baking supplies (flour, salt, etc.)

20. Which of the following is *correct* as it relates to cost curves?
A. Average variable cost intersects(يقطع) marginal cost at the latter's minimum point.
B. Marginal cost intersects average total cost at the latter's minimum point.
C. Average fixed cost intersects marginal cost at the latter's minimum point.
D. Marginal cost intersects average fixed cost at the latter's minimum point.

21. Other things equal, if the prices of a firm's variable inputs were to fall:
A. one could not predict(تكهن) how unit costs of production would be affected.
B. marginal cost, average variable cost, and average fixed cost would all fall.
C. marginal cost, average variable cost, and average total cost would all fall.
D. average variable cost would fall, but marginal cost would be unchanged.



22. In the above figure, curves 1, 2, 3, and 4 represent the:
A. ATC, MC, AFC, and AVC curves respectively.
B. MC, AFC, AVC, and ATC curves respectively.
C. MC, ATC, AVC, and AFC curves respectively.
D. ATC, AVC, AFC, and MC curves respectively.

23. Which of the following is *correct*?
A. There is no relationship between MP and MC.
B. When AP is rising MC is falling, and when AP is falling MC is rising.
C. When MP is rising MC is rising, and when MP is falling MC is falling.
D. When MP is rising MC is falling, and when MP is falling MC is rising.

24. When diseconomies of scale occur:
A. the long-run average total cost curve falls.
B. marginal cost intersects average total cost.
C. the long-run average total cost curve rises.
D. average fixed costs will rise.

PART TWO A: (30 POINTS)

1. A consumer has an income of $24 to spend each day. The only two goods the consumer is interested in purchasing are goods A and B. The marginal-utility schedules for these two goods are shown in the table below. The price of B does not change and is $2. The marginal utility per dollar from B is also shown in the table. But the price of A varies as shown in the table. The marginal utility per dollar from A when the price of A is $8 and $4 is shown in the following table. **(15 points)**

	Good A			Good B	
Quantity	MU	MU/$8	MU/$4	MU	MU/$2
1	48	6	12	24	12
2	32	4	8	15	8
3	24	3	6	12	6
4	16	2	4	8	4
5	8	1	2	6	3
6	4	0.5	1	4	2

Complete the table below to show how much of A the consumer will buy each week at each of the two possible prices of A. Also, show how much B will be demanded when the price of A changes. Explain

Price of A	Quantity of A demanded	Price of B	Quantity of B demanded
$8.00	2	$2.00	4
4.00	4	2.00	4

2. Complete the following short-run cost table using the information provided.

Total product	TFC	AFC	TVC	AVC	TC	MC
0	$24	—	$ 0	—	$24	$
1	24	$24	12	$12	36	12
2	24	12	20	10	44	8
3	24	8	36	12	60	16
4	24	6	56	14	80	20

PART TWO B: TRUE or FALSE (10 POINTS)
Circle the correct answer

1. A rational consumer will cease purchasing a product at that quantity where marginal utility begins to diminish.
   - True - False

2. When total utility is at a maximum, marginal utility is zero.
   - True - False

3. Diseconomies of scale stem primarily from the difficulties in managing and coordinating a large-scale business enterprise.
   - True - False

4. At zero units of output a firm's variable costs are zero.
   - True - False

5. The law of diminishing returns explains diseconomies of scale.
   - True - False

55

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

[redacted]

Second Hour Exam

Student Name: [redacted] 75 Student No.: [redacted]

Section No.: 2

Answer Part I (the multiple-choice questions) here. أجب على أسئلة الجزء الأول على هذه الورقة

Put mark (X) on the letter that corresponds to the best answer as in the following example:

ضع إشارة (X) على الحرف الذي يمثل الإجابة المناسبة، كما في المثال التالي:

Q.	(a)	(b)	(c)	(d)	(e)
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)

27.5

Pulour

BIRZEIT UNIVERSITY
ECONOMICS DEPARTMENT

Second Hour Exam

Student Name: _____ Student No.: _____

Section No.: _____

Economics 13'
First Semester 2014/2015

Miss. Shireen Al Basha (Section 1)
Dr. Mohamed Nasr (Section 2)
Miss. Sana' Atari (Section 3)
Dr. Riyad Musa (Section 4)

***PART I*: Multiple-choice questions (40 points).**
Circle the best answer for each of the following questions:

1. A curve which represents all combinations that give the consumer same level of satisfaction is called
   a. the demand curve.
   b. the budget line.
   (c.) the indifference curve.
   d. the satisfaction curve.
   e. the utility curve.

2. Which of the following costs remain unchanged as the quantity of output increases
   (a.) total fixed cost.
   b. total variable cost.
   c. average variable cost.
   d. average fixed cost.
   e. both (c) and (d) are correct.

3. When total product is a maximum,
   a. marginal product is maximum.
   (b.) marginal product is zero.
   c. average product is zero.
   d. average product is maximum.
   e. total cost is maximum.

4. If a firm has total revenue of $100,000, implicit costs of $20,000 and explicit costs of $90,000, then
   (a.) economic loss is $10,000.
   b. economic profit is $10.000.
   c. normal profit is $10,000.
   d. implicit profit is $10,000.
   e. none of the above.

5. Generally, as consumption of a good increases (بصفة عامة، كلما زاد استهلاك السلعة), then
   (a.) Both total utility and marginal utility decrease.
   b. Both total utility and marginal utility increase.
   (c.) Marginal utility increases and total utility decreases.
   d. Marginal utility decreases and total utility remains unchanged.
   (e.) Marginal utility decreases and total utility increases.

6. If a firm is not producing any output, total cost equals
   a. Zero.
   (b.) fixed cost.
   c. marginal cost.
   d. variable cost.
   e. none of the above.

7. Changes in consumption that results from (ينتج عن) changes in purchasing power (القوة الشرائية) due to (بسبب) changes in price is called
   a. consumption effect.
   b. income effect.
   c. substitution effect.
   d. law of demand.
   e. law of supply.

8. If the total cost of producing 6 units is $48 and the marginal cost of the 7th unit is $15, then
   a. the total fixed cost is 48.
   b. the average fixed cost of 7 units is $9.
   c. the average total cost of 7 units is $9.
   d. the total variable cost of 7 units is $15.
   e. the average variable cost of 7 units is $15.

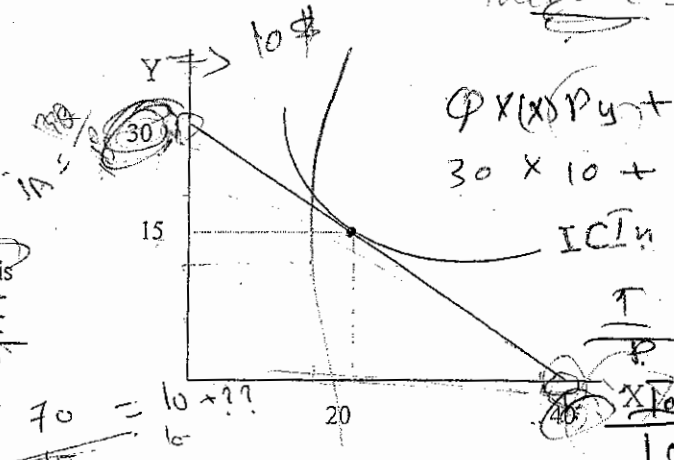
9. Negative marginal utility implies (يتضمن، يدل على) that
   a. total utility is negative.
   b. total utility is rising (تتزايد).
   c. total utility is declining (تتناقص).
   d. marginal utility is rising (تتزايد).
   e. Both (c) and (d) above.

10. In the long run,
   a. average fixed cost is less than average variable cost.
   b. average fixed cost is greater than average variable cost.
   c. only the scale of plant is fixed.
   d. all inputs are fixed.
   e. all inputs are variable.

11. Diamonds (المجوهرات) are more expensive (غالي، مرتفع السعر) than water because:
   a. diamonds are more useful.
   b. water is an inferior good.
   c. diamonds give higher total utility.
   d. diamonds give higher marginal utility.
   e. households are not rational.

12. Under the law of diminishing marginal returns
   a. average product is rising.
   b. average variable cost is rising.
   c. average fixed cost is rising.
   d. marginal product is rising.
   e. marginal cost is rising.

*** Answer the **next two questions** on the basis of the following graph



13. To maximize utility , the consumer should buy
   a. 30 units of Y and nothing of X.
   b. nothing of Y and 40 units of X.
   c. 30 units of Y and 40 units of X.
   d. 15 units of Y and 20 units of X.
   e. none of the above.

14. If the price of good Y is $10, the price of good X is
   a. $ 12.5
   b. $ 7.5
   c. $ 20
   d. $ 10
   e. none of the above

15. At 100 units of output, TC is $10,000 and VC is $6,000. Then AFC equals:
   a. 200
   b. 100
   c. 50
   d. 40
   e. none of the above.

Q	TC	VC
100	10,000	6000

$TC = VC + FC$

$10{,}000 = 6000 + FC$

$-6000 \quad -6000$

$FC = 4000$

$AFC = \frac{FC}{Q}$

$\frac{4000}{100}$

16. When there are economies of scale,
   a. long run average cost is falling.
   b. long run average cost is rising.
   c. marginal cost equals average cost.
   d. short run average cost is rising.
   e. short run average cost is falling.

L	TP	AP	MP
0	0	-	-
1	3	3	3
2	7	3.5	4
3	12	4	5
4	18	4.5	6
5	25	5	7
6	36	6	11
7	40	5.7	4
8	44	5.5	4
9	45	5	1
10	45	4.5	0

PART II: **Essay questions (60 points)**

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

Question 1 (20 points)

Suppose that a business firm produces shirts and employs only two types of inputs: labor (L) which is the only variable input, and capital (K) which is the only fixed input. The price of labor is $20 per worker, while the price of capital is $6 per unit of capital. The firm currently employs 30 units of capital and has the following short-run production function:

L (workers)	0	1	2	3	4	5	6	7	8	9	10
TP (shirts)	0	3	7	12	18	25	36	40	44	45	45

a. If the firm employs 9 workers, what is the average product of workers?

$AP = \frac{TP}{L} = \frac{45}{9}$

$AP = 5$

b. If the firm produces 25 shirts, what is the average variable cost (AVC)?

$AVC = \frac{V.C}{Q} = \frac{20}{25} = 0.8$

$\frac{W.L}{Q} = 20 \times 5 = \frac{100}{25}$

$= 4$

c. If the firm employs 6 workers, what is the marginal product of the sixth worker?

$MP = \frac{\Delta TP}{\Delta Q} \quad \frac{36 - 25}{6 - 5}$

$= 11$

d. If the firm produces 18 shirts, what is the average fixed cost (AFC)?

$AFC = \frac{F.C}{Q}$

$= \frac{6}{18} = 0.3$

$= 20$

15

Question 2 *(20 points)*

Consider the following marginal utility schedule that a consumer derives from goods X and Y. Assume that the consumer has an income of $20, which he spends on these two goods; the price of X is $4 per unit and the price of Y is $2 per unit.

Quantity	MU of X	MU of Y
1	30	18
2	24	16
3	20	12
4	16	10
5	12	8
6	10	6

a. How much is the consumer's total utility when he/she consumes 2 units of X and 4 units of Y? Explain.

$MU = \frac{\Delta TU}{\Delta Q}$

$TU = 2X + 4Y$

b. Assume that the consumer wants to maximize his/her utility, how many units of X and Y will he/she purchase? Why?

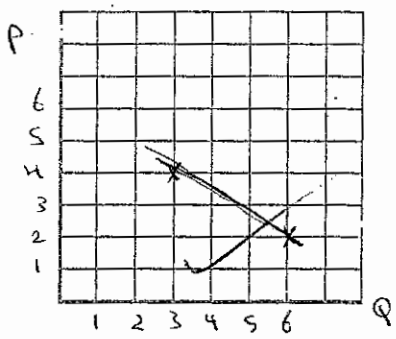
2 from X, and 3 from Y	6
3 from X and 4 from Y	5
4 from X and 5 from Y	4
5 from X and 6 from Y	3

(2X4) + (3X2)	14
(3X4) + (4X2)	20 spend all of income
(4X4) + (5X2)	26
(5X4) + (6X2)	32

c. Suppose that the price of X is decreased to $2 with no change in income or price of Y, what combination of X and Y will this consumer purchase to maximize his/her utility? Why?

d. Construct a demand schedule for good X (below), and draw the demand curve for this consumer in the following space ⇨ **LABEL YOUR GRAPH.**

P	Q_d
4	3
2	6



$P_X \cdot X + P_Y \cdot Y = 20$

$4X + 2Y = 20$

b) to maximize utility he should consume 3 from X and 4 from Y

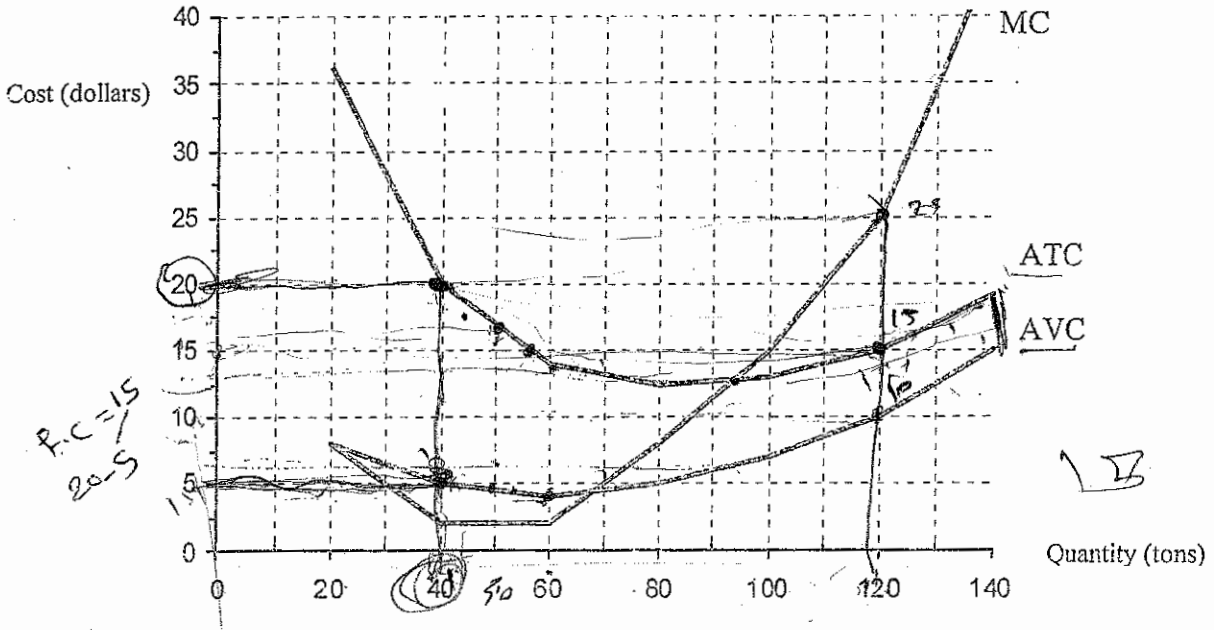
c) $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y} \Rightarrow \frac{20}{4} = \frac{10}{2}$

$5 = 5$

18

Question 3 ***(20 points)***

Consider the following graph which represents the cost curves for a business firm:



Answer the following questions on the basis of the above graph.

First, suppose that the firm is currently **producing 40 tons** of output, calculate the following at this level of output:

a. Total Variable Cost (VC)

$AVC = \frac{V.C}{Q}$

$5 = \frac{V.C}{40}$

$V.C = 5 \times 40$

$= 200$

b. Average fixed cost (AFC)

$AFC = \frac{F.C}{Q}$

$15 = \frac{F.C}{40}$

$F.C = 600$

Second, suppose that the firm is currently **producing 120 tons** of output, calculate the following at this level of output:

a. Total Cost (TC)

$TC = FC + VC$

$= 600 + 1200$

$= 1800$

b. Total fixed cost (TFC)

$TFC = 600$

$AFC = \frac{F.C}{Q}$

$5 = \frac{F.C}{120}$

$F.C = 600$

$AV.C = \frac{V.C}{Q}$

$10 = \frac{V.C}{120}$

$V.C = 12{,}00$

$TC = F.C + V.C$

$= 600 + 1200$

$= 1800$

BIRZEIT UNIVERSITY

Department of Economics

ECON 131 –Principle of Microeconomic

Second Exam

95/100

Student Name: Lu'Lu'a Ibrahim

Student Number: 1140912

1st summer semester 2015 *Mr. Mohammad*
Amreyeh

Answer Sheet

1.	A	B	C	D
2.	A	B	C	D
3.	A	B	C	D
4.	A	B	C	D
5.	A	B	C	D
6.	A	B	C	D
7.	A	B	C	D
8.	A	B	C	D
9.	A	B	C	D
10.	A	B	C	D
11.	A	B	C	D
12.	A	B	C	D
13.	A	B	C	D
14.	A	B	C	D
15.	A	B	C	D
16.	A	B	C	D
17.	A	B	C	D
18.		B	C	D
19.	A	B	C	D
20.	A	B	C	D
21.	A	B	C	D
22.	A	B	C	D
23.	A	B	C	D
24.	A	B	C	D

55

Section I: Multiple Choices (60 points)

1. Marginal utility is the
   (A) satisfaction achieved when a consumer has had enough of a product.
   (B) total satisfaction received from consuming a given number of units of a product.
   (C) extra satisfaction received from consuming one more unit of a product.
   (D) average satisfaction received from consuming a product.

2. A firm has total revenue of $100million, explicit costs of $90million and implicit costs of $20million. It's economic profit is
   (A) $30 million
   (B) $80 million
   (C) $10 million
   (D) -$10 million

   $100 - (90 + 20)$
   $100 - (110)$
   -10

3. Under pure competition, a firm's average revenue is
   (A) equal to price.
   (B) total revenue divided by (مقسوم على) total cost
   (C) the revenue received by the firm per unit of labor hired (لكل عامل تم توظيفه).
   (D) price times quantity sold.

   $AR = MR = P$

4. The example of a pure competitive industry is the
   (A) electricity
   (B) gasoline stations (محطات البنزين).
   (C) wheat industry
   (D) airlines industry.

5. Suppose that the marginal utility you derive from the last slice (قطعة) of cheese pizza purchased is 50 and its price is $1. Also, the marginal utility you derive from the last bottle of soda purchased is 300 and its price is $3.
   (A) Your are presently maximizing your total utility from consuming pizza and soda
   (B) You can increase your total utility by purchasing more pizza and less soda
   (C) You can increase your total utility by purchasing more soda and less pizza
   (D) You can increase your total utility by purchasing zero units of both goods

   $\frac{MU_P}{P_P} = \frac{50}{1} = 50$
   $\frac{MU_S}{P_S} = \frac{300}{3} = 100$
   $\frac{MU_S}{P_S} > \frac{MU_P}{P_P}$

6. Which of the following are implicit costs for a typical firm?
   (A) a business licensing fee (رسوم الترخيص)
   (B) utilities cost (تكاليف الخدمات)
   (C) the cost of labor hired (تكاليف تشغيل عامل) by the firm
   (D) opportunity costs of capital owned and used by the firm

7. A rise in the fixed cost will cause a firm's
   (A) average variable cost curve to shift up.
   (B) average total cost curve to shift up.
   (C) marginal cost curve to shift up.
   (D) average total cost curve to shift down.

TU Max

8. If, when you consume another piece of candy, your marginal utility is zero, then
   (A) you should consume less candy.
   (B) you want more candy.
   (C) you have maximized your total utility from consuming candy.
   (D) you have not yet reached (لم تصل بعد) the point of diminishing marginal utility.

9. A purely competitive firm's supply curve is made up of its marginal cost curve at all points above the minimum
   (A) marginal cost curve.
   (B) average variable cost curve.
   (C) average fixed cost curve.
   (D) average total cost curve.

10. The law of diminishing marginal returns states:
(A) as a firm uses more of a variable input, given the quantity of fixed inputs, its average cost eventually (في النهاية)decreases.
(B) as a firm uses more of a variable input, given the quantity of fixed inputs, its marginal product eventually decreases.
(C) as the size of a plant increases, its marginal product eventually decreases.
(D) as a firm uses more of a fixed input, given the quantity of variable inputs, its marginal product eventually decreases.

11. In a purely competitive industry, the market price is $8. An individual firm is producing the output at which MC $8. AVC at that output is $10. What should the firm do to maximize its short-run profits or minimize its losses?
(A) insufficient information to answer (المعلومات غير كافية للإجابة)
(B) shutdown
(C) leave output unchanged
(D) expand output (يزيد كمية الإنتاج)

12. As Shawqi drinks additional cups of tea at breakfast, Shawqi's
(A) Total utility from tea increase
(B) Total utility from tea decrease
(C) Marginal utility from tea increase
(D) Marginal utility from tea decrease

13. If the total cost of producing 6 units of a product is $48, and the marginal cost of the 7th unit is $15 then
(A) The a average cost of 7 units is $9.
(B) marginal cost of the 7th unit is $9.
(C) price is $15.
(D) fixed cost is $33.

14. If General Motors Corporation is making a negative economic profit, we can conclude that:
(A) it is making a positive accounting profit.
(B) it is making a zero accounting profit.
(C) it is making a negative accounting profit.
(D) All of the above are possible.

15. A consumption point inside (في الداخل) the budget line
(A) Is unattainable
(B) Shows that the consumer spends income on only one of the goods
(C) Shows that the consumer has chosen to spend all of his or her income on both product
(D) Is attainable, but has some unspent income

16. In the short run, a pure competition firm produces output and earns (تحقق) an economic profit if:
(A) P > ATC
(B) P = ATC
(C) P < AVC
(D) AVC > P > ATC

17. Which of the following is true about the relationships among various cost curves?
(A) when MC exceeds (أعلى من) ATC, ATC must be rising
(B) when MC exceeds ATC, ATC could be rising or falling
(C) when ATC is falling, MC must exceed ATC
(D) when TC is rising, MC must exceed TC

18. The economies of scale production level:
(A) Is the output level where ATC at minimum
(B) Is the output level where long-run TC is decreasing
(C) Is the output level where long-run ATC is increasing
(D) Is the output level where long-run ATC is decreasing

Inshaallah 5ain

19. Firms in a pure competition face a:
(A) Perfectly elastic demand curve
(B) Perfectly inelastic demand curve
(C) Unitary elastic demand curve
(D) Downward sloping demand curve

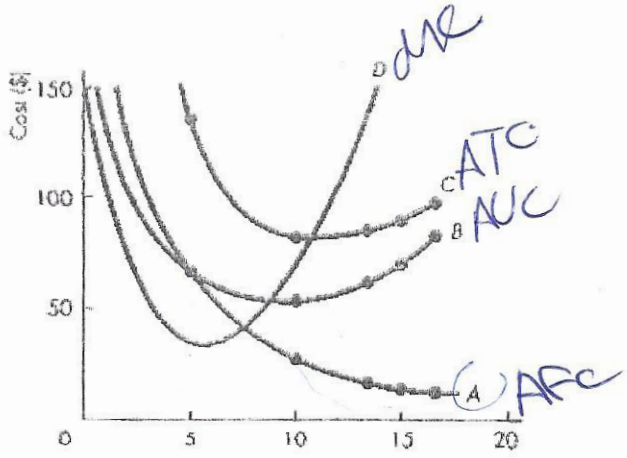
20. Red Stone company currently hires (توظف) 5 workers. When it added a 6th worker, its output actually fell (انخفضت) . Which of the following statements is true?
(A) The average product of the sixth worker is negative.
(B) The sixth worker is not as skilled as the fifth worker.
(C) The total product becomes negative.
(D) The marginal product of the sixth worker must be negative.

21. In perfect (pure) competition,
(A) there are significant restrictions on entry (هناك قيود كبيرة على الدخول)
(B) each firm can influence (تؤثر) the price of the good.
(C) there are few buyers.
(D) all firms in the market sell their product at the same price

22. The break-even point is defined as occurring at an output at which
(A) total cost is minimized.
(B) total revenue equals total variable cost.
(C) Price equal average total cost. P = ATC ⇒ Profit = 0
(D) marginal revenue equals marginal cost

23. A firm that shuts down and produces no output incurs a loss (تتكبد خسارة) equal to its
(A) marginal costs.
(B) total fixed costs.
(C) total variable costs.
(D) Zero

24. In the figure below, curve A is the _____ curve and curve D is the _____ curve.
(A) Marginal cost; average fixed cost
(A) Average variable cost; marginal cost
(B) Average fixed cost; marginal cost
(C) Average fixed cost; average total cost



Section II: Short Answer Questions (40 points) *(show your work بين طريقة الحل)*

14/14

Question # 1(14 points)

Table below shows Sara's utility from Tea and Sandwiches. The price of Tea is $2 per bottle and the price of a sandwich is $3. Sara has $10 to spend on these two goods.

Quantity of Tea	Marginal Utility T	Quantity of Sandwiches	Marginal Utility S	MU_{Tea}/P_T	$MU_{Sandwich}/P_S$	$MU_{tea\ new}/P_{tea\ new}$
1	40	1	45	20	15	40
2	20	2	30	10	10 *	20
3	12	3	27	6	9	12
4	10	4	18	5	6 *	*10
5	6	5	15	3	5	*6
6	2	6	9	1	3	2

a. If Sara maximizes her utility, how many units of each good should she buy?

group	MU per dollar	Choieses	Income = 2T + 3S
A	10	T = 2, S = 2	$(2^4 \times 2) + (3^6 \times 2) = 10$ ✓
B	6	T = 3, S = 4	$(3^6 \times 2) + (4^{12} \times 3) = 18$ ×
C	5	T = 4, S = 5	$(4^8 \times 2) + (5^{15} \times 3) = 23$ ^
D	3	T = 5, S = 6	$(5^{10} \times 2) + (6^{18} \times 3) = 28$ ×

Sara should buy 2 unit of tea and ~~5~~ 2 unit of sandwish to maximizes her utility

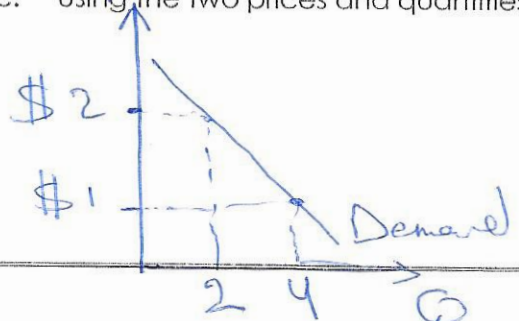
b. Assume that, other things remaining unchanged (مع افتراض العوامل الأخرى ثابتة), the price of Tea falls to $1. What quantities of Tea and Sandwiches will you now purchase to max utility? Is Tea and Sandwiches substitutes , complements or unrelated in this case?

group	MU per dollar	Choieses	I = T + 3S
A	10	T = 4, S = 2	$4 + (2^6 \times 3) = 10$ ✓
B	6	T = 5, S = 4	$5 + 12 = 17$ X

Sara should buy 4 unit of tea and two unit of sandwish to max utility given

P_{Tea} ↓ $\overline{D}_{Sandwish}$ (unchang) $\begin{matrix} \$5 \Rightarrow 2 \\ \$3 \Rightarrow 2 \end{matrix}$ ⟹ Tea and Sandwish are unrelated.

c. Using the two prices and quantities of Tea, derive a demand schedule for Tea.



P↓ Q↑ (negative relation)

Question # 2(12 points)

Use the following table to answer questions below it

Quantity	TVC	TC	AVC	ATC	MC
0	0	20	–	–	–
1				45	
2			25		
3					23
4	100				
5		145			

a. What is the total cost of producing 2 units of output?

$AVC = 25 = \frac{TVC}{Q} = \frac{TVC}{2} \Rightarrow TVC = 50$ (1)

(2) $TC = TVC + TFC$
$= 50 + 20$
$= 70$

b. What is the average fixed cost of producing 4 units of output?

$AFC = \frac{TFC}{Q} = \frac{20}{4} = 5$

c. What is the average variable cost of producing 4 units of output?

$AVC = \frac{TVC}{Q} = \frac{100}{4} = 25$

d. What is the marginal cost of producing 5 units of output?

$MC = \frac{\Delta TC}{\Delta Q} = \frac{145-120}{5-4} = \frac{25}{1}$
$= 25$

$ATC = AVC + AFC$
$= 25 + 5$
$= 30$

$ATC = \frac{TC}{Q}$

$TC = 120$

Question # 3(14 points)

Assume the following cost data are for a purely competitive producer.

(14)

Total Product	Average Fixed cost	Average Variable cost	Average Total cost	Marginal Cost
1	20	80	100	30
2	10	53	63	26
3	6.67	45.93	52.6	32
4	5	44.5	49.5	40
5	4	45.6	49.6	50
6	3.34	46.66	50	52
7	2.85	49.45	52.3	66
8	2.5	53.25	55.75	80
9	2.23	58.37	60.6	100
10	2	65.6	67.6	130

1. Assume that the market price is $80, what is the amount of output that firm should produce to maximize its profit? What economic profit or loss will the firm realize at this output level?

(a) the amount of output that firm should produce to max profit is = 8

($Q^* = 8$)

(b) Profit = $Q(P - ATC)$

$= 8(80 - 55.75)$

$= \$194$

2. If market price decrease to 40, is the firm still produce or shut down? Explain. What economic profit or loss will the firm realize at this price?

$P = 40 < ATC = 49.5 \Rightarrow$ loss

$P = 40 > AVC = 44.5 \Rightarrow$ Shutdown because $AVC > P$

economic loss $\Rightarrow$ F.C $\Rightarrow$ AFC = TFC

$5 = \frac{TFC}{4} \Rightarrow TFC = 20$ (loss)

3. In the table below, complete the short run supply schedule for the firm and indicate the profit or loss incurred at each output.

Price	Quantity supplied, single firm	Profit (+) or loss (-)
66	7	$= Q(P - ATC) = 7(66 - 52.3) = 95.9$
52	6	$= 6(52 - 50) = 12$
50	5	$= 5(50 - 49.6) = 2$
40	0	loss FC = 20
32	0	loss FC = 20

AFC = TFC / Q