- **---Microeconomics Mid-term test – 09/11/2016**

First name **Last name** **n° matricola**

Time: 60 minutes. For answers to type A questions (open questions) only use the space in the box below - For each question B (multiple choice) there is a single correct answer. - The answers not illustrated by calculation, graphics or other will not be taken into account - Only use this sheet for calculations and graphs, using any white space if necessary -

1a. Define an *inferior good*, and a *normal good*. Explain how the demand change Δx of a normal good reacts to a price change Δp_x, if money income is given.

-
-
-
-
-
-

-
-
-
-
-
-

1b. A consumer has the utility function u (x, y) = x + 2y. His income is m = 40. The prices of goods x and y are [2, 2], respectively. If the price of good x becomes $p_x = 1/4$ (and the price of y is unchanged), what can you say about the substitution effect Δx^s for good x?

a) $\Delta x^s = +40$
b) $\Delta x^s = +160$
c) $\Delta x^s = +80$
d) $\Delta x^s = -120$
e) $\Delta x^s = +120$
f) Each answer in the above list is wrong

2a. Define the notion of strictly convex preferences, and clarify its implications

-
-
-
-
-

-
-
-
-

2b. At prices $p_x = 2$, $p_y = 2$ a consumer is buying the bundle (x, y) = (6, 4). At prices $p_x = 1$, $p_y = 2$ the consumer is buying the bundle (x, y) = (8, 2). With reference to the 'weak axiom of revealed preference' (WARP), we can say that:
a) conumer's choice is consistent with WARP
b) conumer's choice is inconsistent with WARP
c) without knowing money income we cannot say whether consumer's choice is or is not consistent with WARP
d) any answer above is wrong

3a. State the second theorem of welfare economics and clarify its implications.

-
-
-
-
-

-
-
-
-

3b. A and B share the same room for 12 hours a day. A loves listening to music, and B loves silence. They use incomes $m_A = m_B = 100$ to buy a composite consumption good C, at the market price p = 1, or to exchange rights to hours of music/silence, between them. A's preferences for hours of music M and C_A are U_A (M, C_A) = 4*log M* + C_A; B's preferences for hours of silence S and C_B are U_B (S, C_B) = 2*log*S + C_B, where $0 \leq M \leq 12$, and M + S = 12. Indicate the hours of music A enjoys in a Pareto efficient allocation.

a) 4
b) 12
c) 16
d) 8
e) none of the other answers is correct

4a. Provide a definition and graphical representation of the net and gross consumer's surplus

-
-
-
-

-
-
-
-
-

4b. A consumer with well-behaved preferences has a physical endowment (ω_x, ω_y) of two goods. Consumer's net supply of good x is positive at prices p_x, p_y. At prices $p_x' > p_x$ and $p_y' = p_y$, we can say that:

a) Consumer's excess supply of good x is positive and her wellbeing deteriorates
b) Consumer's excess demand of good x is positive and her wellbeing deteriorates
c) Consumer's excess supply of good x is positive and her wellbeing improves
d) Consumer's excess demand of good x is positive and her wellbeing improves
e) Each answer in the above list is wrong

5a. Explain the difference between the nominal and the real interest rate, and clarify the relation between them.

-
-
-
-

-
-
-
-
-

5b. In a perfectly competitive economy there are two consumers A e B, with endowments of goods x and y that are (240, 120) for A and (120, 240) for B. Their preferences for x and y are represented by the utility functions $u_A(x, y) = x_A^{1/2} y_A^{1/2}$ e $u_B(x, y) = 2x_B + y_B$. Compute the competitive equilibrium price p_x (when $p_y = 1$) and indicate A's demand x_A at this price.

a) $p_x = ¼$ $x_A = 300$
b) $p_x = ½$ $x_A = 240$
c) $p_x = 1$ $x_A = 180$
d) $p_x = 2$, $x_A = 150$
e) Each answer in the above list is wrong

Solutions to type b questions

1. B + 160
2. B a
3. B 8
4. B c
5. B d

Microeconomics --- Mid-term test -
First name **Last name** **n° matricola**

Time: 60 minutes. For answers to type A questions (open questions) only use the space in the box below - For each question B (multiple choice) there is a single correct answer. - The answers not illustrated by calculation, graphics or other will not be taken into account - Only use this sheet for calculations and graphs, using any white space if necessary -

1a. Define an ordinary good, a normal good, and explain why, if money income is given, a normal good is necessarily an ordinary good.

-
-
-
-
-
-

-
-
-
-
-
-

1b. A consumer has the utility function $u(x, y) = 4\,x^{1/2} + y$. His income is $m = 120$. The prices of goods x and y are [1/4, 1], respectively. If the price of good x becomes $p_x = 1$ (and the price of y is unchanged), what can you say about the substitution effect Δx^s for good x?

a) $\Delta x^s = -60$
b) $\Delta x^s = -48$
c) $\Delta x^s = +60$
d) $\Delta x^s = -56$
e) $\Delta x^s = +48$
f) Each answer in the above list is wrong

2a. State the 'wak axiom of revealed preference' (WARP). Provide a graphical illustration of choices (x_1, x_2), at prices p_1, p_2 and (y_1, y_2) at prices p_1', p_2', that are *consistent* with WARP.

-
-
-
-
-

-
-
-
-
-
-

2b. A consumer has money endowments $m_1 = 100$, $m_2 = 110$ available in two periods 1 and 2, that she can spend for consumption x_1, x_2 in these periods. The nominal interest rate is $r = 0.1$. The money price of consumption is $p_1 = p_2 = 1$ (no inflation). Consumer's preferences are represented by the utility function $U(x_1, x_2) = x_1 + x_2$., What is her choice of x_1?

a) $x_1 = 220$
b) $x_1 = 210$
c) $x_1 = 200$
d) $x_1 = 0$
e) none of the other answers is correct

3.a Define the Engel Curve of a good x, and provide a graphical description in the case of quasi-linear utility $u = x^{1/2} + y$

-
-
-
-

-
-
-
-
-

3b. A and B share the same room for 20 hours a day. A loves listening to music, and B loves silence. They use incomes $m_A = m_B = 100$ to buy a composite consumption good C, at price p = 1, or to exchange rights to hours of music/silence, between them. A's preferences for hours of music M and consumption C_A are U_A (M, C_A) = 4*log M* + C_A ; B's preferences for hours of silence S and C_B are U_B (S, C_B) = *log*S + C_B, where $0 \leq M \leq 20$, and M + S = 20. Indicate the hours of silence B will enjoy in a Pareto efficient allocation.

a) 4
b) 10
c) 12
d) 8
e) none of the other answers is correct

4a. Provide a definition and graphical representation of the net and gross consumer's surplus

-
-
-
-

-
-
-
-

4b. Consumer's preferences for a discrete good x and a perfectly divisible good y are represented by $U(x, y) = 6x^{1/2} + y$; her money income is m = 24. If the price of good y is p_y =1, what is the maximum price *r* at which the consumer is prepared to buy one unit of good x?

a) $r = 8$
b) $r = 6$
c) $r = 2$
d) $r = 1$
e) Each answer in the above list is wrong

5a. State the second theorem of welfare economics and clarify its implications

-
-
-
-

-
-
-
-
-
-
-
-

5b. In a perfectly competitive economy there are two consumers A e B, with endowments of goods x and y that are (240, 0) for A and (0, 240) for B. Their preferences for x and y are represented by the utility functions $u_A(x, y) = x_A^{1/2} y_A^{1/2}$ e $u_B(x, y) = x_B^{1/4} y_B^{3/4}$. Determine the competitive equilibrium price p_x, when $p_y = 1$.

a) $p_x = 2/3$
b) $p_x = 1$
c) $p_x = 1/2$
d) $p_x = 2$
e) Each answer in the above list is wrong

Solutions to type b questions:

1. B - 60
2. B 0
3. B 4
4. B 6
5. B 1/2

Microeconomics --- Mid-term test - 1

Time: 50 minutes. For answers to type A questions (open questions) only use the space in the box below - For each question B (multiple choice) there is a single correct answer. - The answers not illustrated by calculation, graphics or other will not be taken into account - Only use this sheet for calculations and graphs, using any white space if necessary -

1a. Define and comment upon Slutsky's substitution effect.

-
-
-
-
-
-
-
-
-

1b. A consumer has the utility function u (x, y) = x + 2y. His income is m = 20. The prices of goods are respectively [1,1]. If the price of y becomes 3 (with the price of x fixed at 1), what can you say about the substitution effect for good y?

a) it is zero
b) it is -10
c) it is -20
d) it is +10
e) it is equal to the income effect

2a. Comment upon the notion of general competitive equilibrium.

-
-
-
-
-
-
-
-
-

2b. In an Edgeworth box both consumers A and B have Coob-Douglas utility function: $U_A=x_A^{3/5}y_A^{2/5}$ $U_B=x_B^{2/5}y_B^{3/5}$. The initial allocations are $\omega_A=(3,4)$ and $\omega_B=(4,3)$. In a general competitive equilibrium, if the price of good y is the numeraire, the price of good x:

a) is equal to 1
b) is equal to 1/2
c) is equal to 2
d) is equal to 1/4
e) cannot be determined

3a. Define the notion of reservation price

-
-
-

-

3b. A consumer has the utility function u (x, y) = (x + 1) (y + 2) and an initial basket (4.5). How many units of good x is he willing to give in return for 3 more units of good y?

a) A maximum of 2
b) A minimum of 2
c) A maximum of 2.5
d) A minimum of 2.5
e) None of the other answers are correct

4a. In the choice inter-temporal consumption, discuss the factors affecting the relative price ratio between consumption at time 1 and consumption at time 2, distinguishing between zero and positive inflation of monetary prices.

-
-
-

-
-
-
-

4b. A consumer has money endowment, available in two periods 1 and 2, that she can spend for the consumption of goods in these periods. The endowment is (1000.1100), the nominal interest rate is 10%. The money price of consumption at time 1 is p1 = 100. The money price of consumption at time 2 is p2 = 110. If the consumer wants to spend her budget only for consumption in period 1, what is her choice of c1?

a) c1 = 20
b) c1 = 25
c) c1 = 40
d) c1 = 50
e) none of the other answers is correct

5a. Given a demand function of good x in the form $x=f(p_x,p_y,m)$, how can you understand whether the good x is substitute or complement of the other good y?

-
-
-
-
-
-
-
-
-

5b. A consumer has endowment $\omega_1=2$ e $\omega_2=1$, of two goods, 1 and 2. Her preferences are represented by the utility function $u = 4x_1^{1/2} + x_2$. At prices p1 = 2, p2 = 1 which is her net demand for good 1?

a) -3/2
b) +1
c) -1
d) -1/2
e) none of the other answers is correct

Microeconomics – Mid-term Test - 2

Time: 50 minutes. For answers to type A questions (open questions) only use the space in the box below - For each question B (multiple choice) there is a single correct answer. - The answers not illustrated by calculation, graphics or other will not be taken into account - Only use this sheet for calculations, graphs, and any other account using any white space if necessary -

1a. State and comment upon the first welfare theorem of economics

-
-
-
-
-

-
-
-
-
-

1b. Consumer's preferences for hours of rest R and consumption C are represented by the utility function $U(R, C) = 8R^{1/2} + C$. The consumer has an endowment of 12 hours a day, he can use for rest or work, at a market wage w. He has no initial endowment of consumption good, or money. Determine how many hours he wants to rest, at prices $w = 2$ and $p_C = 1$.

a) R = 2
b) R = 6
c) R = 4
d) R = 8
e) it is impossible to determine the value of R because income is unknown
f) none of the other statements is correct

2a. Define the notion of reservation price of a good

-
-
-
-
-
-

-
-

-
-

2b. An agent consuming the same good in two periods (c_1, present consumption, and c_2, future consumption), has an endowment of money in the two periods (m_1= 200, m_2 = 220) and preferences represented by $U = c_1^{1/2} c_2^{1/2}$. The money price of goods in the two periods is p = 1 (there is no inflation). Identify the optimal choice (c_1, c_2) if the money interest rate is r = 0.1.

a) c_1 =100 c_2 = 320
b) c_1 =220 c_2 = 200
c) c_1 =200 c_2 = 220
d) c_1 =180 c_2 = 240
e) no answer

3a. Define a Giffen good. Explain why for a consumer with given *monetary* income, a Giffen good is necessarily an inferior good.

-
-
-

-
-
-
-
-
-
-
-

3b. A consumer with utility function $U(x, y) = x^{3/4} y^{1/4}$ has a daily monetary income E = 80 . Goods prices are initially [3.2] , to become later [2,2]. The fall of p_x causes an increase Δx of the daily demand for x. Indicate which part of Δx is explained by Slutsky's substitution effect Δx^S.

a) $\Delta x^S = + 10$
b) $\Delta x^S = + 15/2$
c) $\Delta x^S = + 5/2$
d) $\Delta x^S =$ zero
e) none of the other answers is correct

4a. Define the concept of net consumer surplus

-
-
-
-
-
-
-

-
-
-
-
-

4b. Two agents A and B have utility functions for goods x and y $u_A(x, y)=x_A^{1/2} + y_A$ and $u_B(x, y)=x_B y_B$. The initial endowments of goods are (1, 2) for A and (2, 1) for B. Illustrate, also with a graphical representation, if subjects have an incentive to exchange goods.

a) yes, because the initial allocation is Pareto efficient
b) yes, because the initial allocation is not Pareto efficient
c) no, because the initial allocation is Pareto efficient
d) no, because the initial allocation is not Pareto efficient
e) none of the other answers is correct.

Microeconomics --- Midterm test 3

Time: 50 minutes. For answers to type A questions (open questions) only use the space in the box below - For each question B (multiple choice) there is a single correct answer. - The answers not illustrated by calculation, graphics or other will not be taken into account - Only use this sheet for calculations, graphs, and any other account using any white space if necessary -

1a. Define an ordinary good and indicate what is meant by "law" of demand?

-
-
-
-
-
-
-
-
-
-
-

1b. A consumer with utility function $U(x_1, x_2) = 2x_1^{1/2} + x_2$ has a daily money income of euro = 100. The prices of goods are initially [1/2, 1], to become later [1/4, 1]. Indicate the daily change of the demand for good x that is explained by Slutsky's *substitution effect* Δx_1^S.

a) $\Delta x_1^S = 0$
b) $\Delta x_1^S = -2$
c) $\Delta x_1^S = +8$
d) $\Delta x_1^S = +4$
e) none of the other answers is correct

2a. Draw the shape of an indifference curve on the plane (x_1, x_2) produced by preference represented by a utility function U (x_1, x_2) = min{ax_1,bx_2}, and define the demand function for good 1, at prices p_1, p_2 and income m.

-
-
-
-

-
-
-
-
-
-

2b. A consumer has utility function $U(x_1,x_2) = x_1^2 x_2$. Her initial endowment of goods is (20,10). If prices are [1,2], what is the her *net demand* for good 2?

a) + 5
b) - 10
c) - 10/3
d) + 20
e) none of the other statements listed is correct

3a. Define the real interest rate, produced by money interest r and inflation rate π. If the consumer has initial a endowment (m1, m2) of money income, what is the effect of π > 0 on the position of her initial endowment in the plane c1, c2?

-
-
-
-
-
-
-
-
-
-

3b. A consumer has quasi-linear preferences for the consumption of theater shows, T, and of the other goods C. The price of C is $p_c = 1$. If her utility function is $U(T, C)=40T - 10T^2 + C$ what is the *reservation price* for the consumption of her first theater show?

a) 40 euro
b) 30 euro
c) 20 euro
d) it cannot be determined, because consumer's income is not spelled out
e) none of the other answers is correct

4a. State the second welfare theorem of economics and briefly clarify its meaning

-
-
-
-
-

-
-
-
-
-

4b. A perfectly competitive economy consists of two agents A and B, with utility functions for goods x and y, $u_A(x, y) = x_A\ y_A$ and $u_B(x, y) = x_B + y_B$, respectively. The initial endowments of goods are (3, 3) for A and (1, 1) for B. Determine the *competitive equilibrium price* for good x, when good y is the numeraire.

a) $p_x = 1/2$
b) $p_x = 1$
c) $p_x = 3/2$
d) it cannot be determined, because the income of both parties is not shown
e) none of the other answers is correct.

Answers to type-B questions

Test 1

Question	answer	correct numerical value
1.b	c	- 20
2.b	a	1
3.b	e	1.5
4.b	a	20
5.b	c	- 1

Test 2

Question	answer	correct numerical value
1.b	c	4
2.b	c	c1 = 200 c2 = 220
3.b	c	$MRS_A = MRS_B$
4.b	c	+5/2

Test 3

Question	answer	correct numerical value
1.b	c	+ 3
2.b	c	-10/3
3.b	b	30 Euro
4.b	b	$p_x = 1$