Before you start read the following carefully:

➢ The exam has a maximum duration of <u>two hours and thirty minutes</u>.

➢ The exam has two parts: Part A consists of 14 multiple-choice questions, Part B, of three groups of open-answer questions.

➢ Write your answers to **Part A** in the **table** below, on this page. At the end of the exam separate this sheet from the rest of the exam and hand it in together with your answers to Part B. Make sure you have written your <u>identification</u>.

➢ The groups in **Part B** must be answered on **separate sheets.** Each sheet must have your <u>identification</u>, otherwise, your answers will not be counted. Alineas of different groups cannot be answered on the same sheets of paper. If that happens, part of the alineas will not be corrected.

➢ You cannot look up any books, notes or any other learning material. Keep any mobile phones, tablets and pcs switched off**.**

➢ You may use only NON-GRAPHING calculators.

Full name:		
Student number:	**Class:**	**Degree:**

Part A (7 marks)

In the table below, indicate with an 'O' the correct answer to the questions 1 to 14. You get 0.5 marks for each correct answer and will have a 0.15 deduction for each wrong answer.

At the end of your exam separate this sheet from the rest of the exam paper and hand it in together with your answers to Part B.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)
b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)	b)
c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)	c)
d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)	d)

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1. **Consider the information in the following table, about the production of two goods: *cars* and *airplanes*, in two countries, *A* and *B*, that want to trade with each other. Both countries have production possibility frontiers that are straight lines.**

   Number of working hours necessary to produce:

	A	*B*
1 *car*	50	40
1 *airplane*	200	160

   Based on such information, it is possible to say that:

   a) country *A* has comparative advantage in the production of airplanes.

   b) country *A* has comparative advantage in the production of both goods.

   c) country *B* has comparative advantage in the production of airplanes.

   d) none of the other alternatives is correct.

2. **A market for one good, with a positively sloped supply curve and a negatively sloped demand curve, is initially in equilibrium. If both curves shift to the right, then we can say that in the new equilibrium:**

   a) the quantity traded is greater and the price is lower.

   b) the quantity traded is greater and the price is higher.

   c) the quantity traded is greater but we cannot conclude about the price.

   d) we can conclude nothing about the quantity but the price is higher.

3. **Given the market supply function Q^s = -42 + 6p and the market demand function $Q^d = 78 - 4p$ of a certain good, it is possible to conclude that, in the equilibrium:**

   a) the consumer surplus is 125 m.u..

   b) the producer surplus is 75 m.u..

   c) the equilibrium price is 3,6 m.u..

   d) the equilibrium quantity is 36 m.u..

4. **Consider the following information about the market demand and the market supply of wheat:**

p	Q^d	Q^s
1,20	9,0	12,0
1,10	9,5	11,0
1,00	10,0	10,0
0,90	10,5	9,0
0,80	11,0	8,0

   where p is the price of wheat in euros/kg, Q^d is the quantity demanded of wheat in thousands of kg and Q^s is the quantity supplied of wheat, in the same units. If the government imposes a *minimum price* of 0,9 euros/kg wheat, the quantity of wheat that is traded in this market, in the above mentioned units, is:

   a) 10,5.

   b) 9,0.

   c) 1,5.

   d) 10,0.

5. **Consider that the demand is perfectly inelastic and that the price-elasticity of supply is 0,8, in the equilibrium point. Then, the economic incidence of an excise tax of 10 m.u. imposed on the producers is**

   a) 10 m.u. on the consumers and 0 m.u. on the producers.

   b) 8 m.u on the consumers and 2 m.u. on the producers.

   c) 2 m.u. on the consumers and 8 m.u. on the producers.

   d) 0 m.u. on the consumers and 10 m.u. on the producers.

6. **In the short term, under perfect competition, the firms are on a production point where the average total cost is lower than the marginal cost. Then, we may say that:**

   a) the market is in a long-run equilibrium.

   b) all the firms in the market have losses.

   c) in the long-run, the number of firms will increase.

   d) in the long-run, the number of firms will decrease.

7. **Under perfect competition, a firm is producing the optimal quantity of 70 units. We know that the total revenue is 490 m.u.. What is the marginal cost of the last unit produced?**

   a) 7 m.u..

   b) 10 m.u..

   c) There is not enough information to answer.

   d) 12 m.u..

8. In a perfectly competitive market, the supply function of the representative firm is

$$Q^S = p/2$$

and the demand function is given by

$$Q^D = 200 - 50p$$

with the usual notation.

   If there are 100 similar firms, the market equilibrium is given by the pair

   a) $Q=100$; $p=2$.
   b) $Q=250$; $p=1$.
   c) $Q=150$; $p=2,5$.
   d) We do not have enough information to calculate the values.

9. When compared to the single-price monopolist, the monopolist that perfectly discriminates prices

   a) produces greater quantities.
   b) causes larger deadweight loss.
   c) produces smaller quantities.
   d) None of the other alternatives is correct.

10. Suppose that there are two firms – A and B – working in an oligopolistic market. These firms may choose between strategies X and Y. The payoffs (profits) from the adoption of each of the strategies, by each firm, are given in the following payoff matrix.

Firm B

		X		Y	
Firm A	**X**	36	30	42	42
		(A)	(B)	(A)	(B)
	Y	42	42	30	36
		(A)	(B)	(A)	(B)

   With this information, we can conclude that in this game:
   a) (X, X) is an equilibrium in dominant strategies.
   b) (Y, Y) is an equilibrium in dominant strategies.
   c) there is no equilibrium in dominant strategies.
   d) The information is not enough to know whether there is an equilibrium in dominant strategies.

11. The profit maximization rule Marginal Cost = Marginal Revenue is followed by the firms in the following market structures:

   a) In monopolistic competition but not in perfect competition nor in monopoly.
   b) In perfect competition and in monopoly but not in monopolistic competition.
   c) In monopolistic competition, in perfect competition and in monopoly.
   d) In monopoly and in monopolistic competition but not in perfect competition

12. Which of the following characteristics is NOT associated with a monopolistic competition market?

   a) Large number of producers.
   b) Differentiated products.
   c) Inexistence of barriers to market entry and exit.
   d) One firm dominates almost the whole market.

13. Consider the image below. In a market of a good with negative externalities, the optimal social output level is:
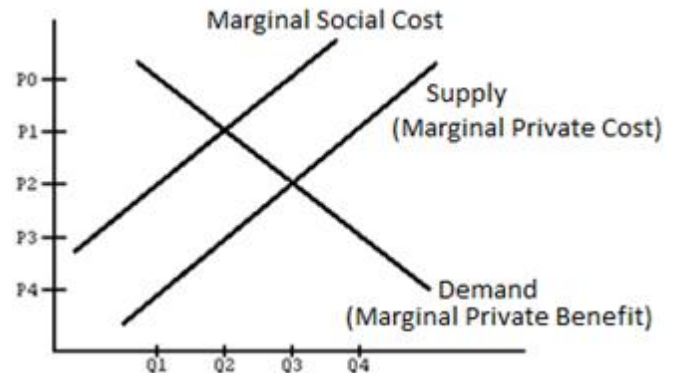
   a) Q1.
   b) Q2.
   c) Q3.
   d) Q4.

14. An externality is said to be internalized when

   a) individuals take external costs and benefits into account in their decision making.
   b) the government bans activities that generate negative externalities.
   c) individuals learn to accept negative externalities.
   d) the impact of one person's actions on the well-being of others is not felt by that person.

Parte B (13 marks)

1. Katherine sells biscuits for 4 euros a dozen. She sells 50 dozen, and decides that she can charge more. She raises the price to 6 euros a dozen and sells 40 dozen.

    a) What is the elasticity of demand? (1v)

    b) Assuming that the elasticity of demand is constant, how many biscuits would she sell if the price were 10 euros a dozen? (1v)

    c) Katherine also sells cupcakes. She noticed that when she raised the price of biscuits from 4 to 6, the demand for cupcakes increased 10%. Calculate the cross-elasticity between biscuits and cupcakes and classify the relation that exists between the two goods. (1v)

    [Answer the following group on a separate sheet of paper!]

2. The following table shows the total utilities (TU) of Marcelo for the activities *kitesurf* and *SUP* (*Stand-Up-Paddle*).

Hours per day	TU - *kitesurf*	TU - *SUP*
1	120	40
2	220	76
3	300	106
4	360	128
5	396	140
6	412	150
7	422	158

   Marcelo has €35 to spend in *kitesurf* and in *SUP* and may spend the time he wants practicing these activities. Renting the equipment for *kitesurf* costs €10 per hour and renting a *SUP* surfboard costs €5 per hour.

    a) Determine Marcelo's marginal utility of consuming *kitesurf* and of consuming *SUP* for each level of hours spent in the respective activity present in the table. Does Marcelo's marginal utility of *kitesurf* follow the principle of decreasing marginal utility? And what about the marginal utility of *SUP*? Justify. (1,5v)

    b) How many hours per day should Marcelo spend on each activity, so that he maximizes his total utility? (2v)

    c) If the cost of renting a *SUP* surfboard raises to €7 per hour, and the cost of renting the equipment for *kitesurf* does not change, what income would Marcelo need to be able to spend the same number of hours in each activity (as in b))? (1,5v)

[Answer the following group on a separate sheet of paper!]

3. A monopolist has the total cost function:

$$TC = 200.Q + 15.Q^2$$

and faces a demand function given by:

$$P = 1200 - 10.Q \ .$$

a) What output maximizes its profit? What is the profit-maximizing price? (2v)

b) What is the maximum profit? (1,5v)

c) Suppose that before realizing what the profit-maximizing price was, the monopolist charged a price of 500. Explain what were the price effect on the revenue and the quantity effect on the revenue when moving from that situation to the profit-maximizing situation that you found in the previous alineas. Illustrate graphically. (1,5v)

[Paper provided for rough work]