Special Period Exam

Full name: ……………………………………………………………………………………………………

Student number: ………………………….................. Class: ……………………….

1. This exam consists of two parts. Part A consists of 16 multiple-choice questions and is worth 10 points. Part B consists of 2 open questions and is also worth 10 points.
2. Part A must be completed in 50 minutes and Part B in the remaining 70 minutes.
3. Indicate your answers to part A with an 'X' in the table below. Each correct answer is worth 0.625/10 points and each wrong answer is penalized 0.625/3 points.
4. Your answers to each of the two open questions in Part B should be written on separate answer sheets.
5. Any kind of consultation is not allowed.
6. Turn off mobile phones, computers, tablets, and smartwatches. Their use will be considered as fraud.
7. Return this sheet even if you withdraw from the exam.

ANSWER TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	a	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	b	b
C	c	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	d	d

PART A

Multiple choice (10 points / 50 min)

1. Suppose a company is the only one selling bottles of water in a small town. The marginal costs of sales are constant and demand is linear, of the type P=a-b*Q. Suppose the government will impose a tax of €1 on each bottle sold. What is the effect of this tax on the price charged by the company?

a. increases by €1.

b. increases by €0.5.

c. decreases by €1.

d. decreases by €0.5

2. In a monopolistic market, maximum efficiency is achieved when:

a. the company practices a single price.

b. the company practices 2nd degree price discrimination.

c. the company practices 3rd degree price discrimination.

d. the company practices perfect price discrimination.

3. A monopoly selling strawberries can differentiate between consumers in the North, Centre and South of the country, with no resale possible. The demand elasticities in the North, Centre and South are, in absolute value, equal to 5, 2, and 3, respectively. The highest price set by the company is in the North region. We can say that:

a. the company is maximizing its profit.

b. the company is maximizing its sales.

c. the company is not maximizing its profit.

d. We cannot draw conclusions about the company's choices.

4. Which of the following statements best describes the concept of a Nash equilibrium?

a. the set of strategies in which all players achieve their best possible results, regardless of the actions taken by other players.

b. the set of strategies in which no player has an incentive to deviate from the chosen strategy, given the strategies chosen by the other players.

c. A situation in which one player dominates the others and can impose his preferred outcome.

d. the set of strategies in which players cooperate to maximize joint results, leading to efficient results.

5. Suppose that the market for sports drinks has two companies, Mira and Tilo. Mira is the market leader and is considering the possibility of launching a new advertising campaign. The company Tilo can choose to respond (and also launch an advertising campaign) or not respond. Suppose that companies' profits are given by the following matrix, where the first (second) payoff in each cell is the payoff of Mira (Tilo). What is the Nash equilibrium of this game?

|		Tilo	
		Respond	Do not respond
Mira	New campaign	5,5	7,6
	No new campaign	8,5	10,10

a. New campaign, Respond.

b. New campaign, Do not respond

c. No new campaign, Do not respond.

d. No new campaign, Respond.

6. Which of the following statements best describes competition in the Stackelberg model?

a. Companies compete by simultaneously fixing quantities.

b. Companies compete by setting prices and not quantities.

c. One company acts as a leader, choosing its quantity, before the other company reacts.

d. Firms collude to maximize joint profits.

7. Monopolistic competition is similar to:

a. perfect competition, as companies face decreasing demand curves and make zero profits.

b. pure monopoly, because they can make profits in both the short and long run.

c. pure monopoly, in that companies face downwards sloping demand curves, and similar to perfect competition, in that long-term profits are zero.

d. perfect competition, as companies compete with homogeneous products.
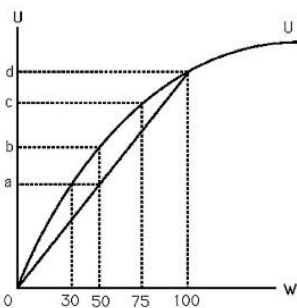
8. The figure above shows the utility function of an individual. She currently has €100 worth of wealth but has a 50% chance of being robbed and be left with €0. The midpoint of the linear line that starts at wealth €0 and intersects the utility function where wealth is €100, represents:

a. The risk premium.

b. The expected utility of receiving €50 with certainty.

c. The expected utility of receiving €0 with 0.5 probability and €100 with 0.5 probability.

d. The individual's neutrality in the face of risk.

9) An individual's utility for each additional euro increases more when she has €1,000 than when she has €10,000. We can conclude that this individual is:

a. risk averse.

b. risk loving.

c. risk neutral.

d. with a negative marginal utility of wealth.

10. Which of the following is not a characteristic of adverse selection?

a. It occurs when one side of the market has more information than the other.

b. It decreases quality of the products or services on the market.

c. It is a problem that emerges when parties on the market share all the information.

d. It is a problem that tends to affect insurance markets.

11. In the context of health insurance, moral hazard refers to the increased use of health care resulting from:

a. the reduction in healthcare production costs.

b. the lower cost of illness borne by insured individuals.

c. greater risk aversion.

d. a decrease in the elasticity of the return on investment in health.

12. Which of the following is not an example of a negative externality?

a. A factory that emits greenhouse gases.

b. Bees pollinating the flowers of a flowering plant.

c. Parents that choose to not vaccinate their child against polio.

d. A neighbor who plays the saxophone at 3:00 in the morning.

13. A Pigouvian tax does the following:

a. maximizes government revenue.

b. selects tax rates across goods to minimize distortions subject to income constraints.

c. internalizes externalities.

d. decreases taxes to efficiently allocate funds in society.

14. Suppose that people in a village consume one private good and one public good. The marginal cost of the private good is €2 and the marginal cost of the public good is €10. What is the algebraic expression that guarantees optimal provision of the public good? (MRS stands for Marginal Rate of Substitution and Σ reflects the sum over the people in the village).

a. Σ MRS = 5.
b. MRS = 5.
c. Σ MRS = 10.
d. MRS = 10.

15. A public good is best described as:

a. the property of a person or family and is therefore exclusive.

b. an inexhaustible resource.

c. a productive factor, such as capital or land, and is limited and rival.

d. property of the whole society, which can be used by anyone, being non-exclusive and non-rivalrous.
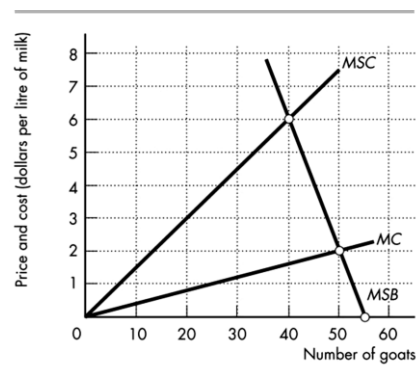
16. The graph above includes the curves for the marginal private costs (MC), the marginal social costs (MSC), and the marginal social benefits (MSB) of raising goats on a shared field. If property rights over the field are granted to a herder efficiently, then the herder will raise:

a. 0 goats.

b. 40 goats.

c. 50 goats.

d. 55 goats.

PART B

Open questions (10 points / 70 min)

SOLVE EACH QUESTION ON A SEPARATE ANSWER SHEET

QUESTION 1 (5 points)

The following three questions are independent.

a) (1p) A monopolistically competitive market is characterized by free entry into the market and a high number of companies. According to the characteristics of this market structure, are the companies price-takers or price-setters? Explain.

b) (2p) Ana and Bela have a job interview at the same consultancy firm. They both must choose between wearing a black suit versus a blue suit for the interview. Suppose that the pay-off matrix is as follows, where the first (second) number in each cell represent the pay-off of Ana (Bela):

		Bela	
		Black	Blue
Ana	Black	1,0	0,1
	Blue	0,1	1,0

Analyse whether there are Nash equilibria in this game, in pure and mixed strategies. Explain.

c) (2p) Carlos maximizes (expected) utility. His utility of wealth is given by $u(w) = w^{0.5}$. Carlos has initial wealth w_0 = €10,000. He gets the option to invest €6,000. The net return on this investment is €3,000 (positive) with a probability of 60% and -€3,400 (negative) with a probability of 40%. Will Carlos make this investment? Explain.

a) Price-setters, because of product differentiation.

b) There is no Nash equilibrium in pure strategies, but there is a Nash equilibrium in mixed strategies, both players choose Black with probability 50% and Blue with probability 50%.

c) Utility without investment u(10000) = 100. Expected utility with investment = 0.6*u(10000+3000) + 0.4*u(10000–3400) = 100.91. Hence, he prefers to invest.

QUESTION 2 (5 points)

The following three questions are independent.

a) (1.5p) There are several holiday apartments in Sesimbra. The owners and tourists would both be interested in renting these appartements against €400 per week, but for the owners this requires that tourists take good care of the apartments. However, once the lease contracts are signed, the owners cannot properly monitor whether tourists take good care of the apartments and hence tourists have no incentive to do so. Explain the potential implications of this moral hazard for the market equilibrium and efficiency.

b) (1.5p) Can congestion on a bridge without toll be considered as an example of a tragedy of the commons? Explain.

c) (2p) In a community of 40 individuals, denoted by subscript i, everyone's search for a public good Y is given by $y_i = 20 - 10p$. The marginal cost of the public good is 20. Determine the socially optimal provision of the public good. Explain.

a) The owners, to avoid losses, may charge higher rents. Therefore, some tourists will no longer be interested. Hence, initially mutual beneficial transactions (against a price of 400 per week) will no longer take place, and hence there is inefficiency.

b) Yes. Drivers enter the bridge until their private marginal benefit equals private marginal cost, and by doing so they ignore the costs inflicted upon other drivers.

c) $p = 2 - 0.1y$; $40p = 80 - 4y$; $80 - 4y = 20$; $y = 15$.