LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Microeconomics II

Licenciatura in Economics

3rd of July 2018
Duration: 60m + 90m

Regular Exam — Part A

Maximum duration of Part A: 60 minutes

Full Name: ……

Student Number: …… Class: ……

1. Mark your answers with an 'O' in the table below. You get 0.5 marks for each right answer, and a 0.5/3 (≈ 0.167) deduction for any wrong answer.
2. You cannot look up books or notes of any kind. Invigilators will not help you with the test.
3. You cannot use calculators, computers, mobile phones, or any other data storage device.
4. This test paper must be returned to the invigilator even if you decide not to take the test.

ANSWER SHEET

	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

1. Which of the following is true?
   a) A player may have at most two dominant strategies.
   b) If a player has two dominant strategies one is a mixed strategy.
   c) A player may have two strategies that are best responses to the other player's strategy.
   d) None of the other alternatives is correct.

2. In an equilibrium in an infinitely-repeated prisoner dilemma:
   a) The outcome in each repetition is the same as it would be in the non-repeated game.
   b) The outcome may be Pareto-efficient in all repetitions.
   c) The outcome is Pareto-efficient in no repetition.
   d) None of the other alternatives is correct.

3. The Nash equilibrium(s) in pure strategies in the following game are:
   a) (B, E) and (B, D).
   b) (B, E).
   c) (B, E) and (C, D).
   d) (B, E), (B, D) and (C, D).

	E	D
C	-1, 1	0, 0
B	0, 0	0, 0

4. Adverse selection may occur if:
   a) All agents have the same information.
   b) One market side (buyers or sellers) has information the other side does not have.
   c) Workers neglect their duties after receiving bonuses.
   d) No agents have any information.

5. Ana may die with 0.1% probability this year. Paying an annual €1 000 insurance premium, her family will receive €1 000 000 compensation if she dies. The insurance company's expected profit form this transaction is:
   a) Zero.
   b) €100.
   c) €1 000.
   d) €1 100.

6. Having bought life insurance, Ed started to practice hang gliding. This is an example of:
   a) Adverse selection.
   b) Signalling.
   c) Screening.
   d) Moral hazard.

7. A monopolist's marginal revenue is negative:
   a) Never.
   b) If demand is inelastic.
   c) If the monopolist sells a non-essential good.
   d) If the price-elasticity of demand is higher than 1 (in absolute value).

8. A 20% tax on the monopolist's economic profit causes profit-maximising output to:
   a) Fall.
   b) Increase.
   c) Remain unchanged.
   d) There isn't enough information to answer.

9. Which of the following best fits the Stackelberg model?
   a) Simultaneous game.
   b) Sequential game.
   c) Repeated game.
   d) Game with dominant strategies.

10. A cartel has a marginal revenue given by $MR(Y) = 10 - Y$. Its members have marginal costs given by $MC_1(y_1) = 2$ and $MC_2(y_2) = y_2$ ($y_1 + y_2 = Y$). The cartel maximises profit with:
    a) $y_1 = 3$ and $y_2 = 5$.
    b) $y_1 = 5$ and $y_2 = 3$.
    c) $y_1 = 4$ and $y_2 = 4$.
    d) None of the other alternatives.

11. Firms in a Bertrand oligopoly:
    a) Set prices simultaneously.
    b) Set quantities repeatedly.
    c) Set quantities sequentially.
    d) None of the other alternatives.

12. If there is a positive production externality, marginal social cost will:
    a) Exceed marginal private cost.
    b) Equal marginal private cost.
    c) Be less than marginal private cost.
    d) Not depend on marginal private cost.

13. Marginal private cost is $MC = Q$ (Q is the quantity produced). Marginal private benefit is $MB = 200 - Q$; and there is a constant marginal external cost of 10. The socially efficient output level is:
    a) Zero.
    b) 50.
    c) 95.
    d) 100.

14. A common resource, such as the commons, features:
    a) Rivalry and exclusion.
    b) Non-rivalry and non-exclusion.
    c) Non-rivalry and exclusion.
    d) Rivalry and non-exclusion.

15. A good features exclusion if:
    a) One person's consumption does not reduce the amount available to others.
    b) One person's consumption reduces the amount available to others.
    c) It is impractical to prevent someone from consuming the good.
    d) It is easy to prevent someone from consuming the good.

16. Free riding occurs with public goods because:
    a) People who do not pay for the good cannot be excluded from consuming it.
    b) Public goods are provided free of charge.
    c) Consumers place no value on public goods.
    d) All other alternatives are correct.

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Repeat Exam — Part B

Maximum duration of the exam: 2 hours

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QUESTION 1 (4 marks)

A market with demand curve $y = 150 - y/2$ is supplied by a single firm with costs $c(y) = 20y$.

a) (2 marks) Find the profit-maximising quantity and (single) price, the consumer surplus, the producer surplus, and the deadweight loss. Illustrate in a graph.

b) (1 mark) Now the firm engages in perfect price discrimination. Discuss whether this policy increases market efficiency even though the surplus distribution between consumers and the firm becomes more unequal.

c) (1 mark) Now a second firm enters the market. It has the same cost function, i.e. $c_2(y_2) = 20y_2$. The two firms set prices simultaneously. Find the new market equilibrium. Does social welfare increase relative to the situation in part a)? Explain.

QUESTION 2 (4 marks)

Alice and Bernard are writing a joint coursework. Their grade will depend on how much time they devote to the coursework. They both want a high grade, but both have other more enjoyable ways to use their limited time. So each has to independently and simultaneously decide whether to dedicate many hours or just a few hours to their coursework. Their utility will be as shown in the following payoff matrix:

		Bernard: *Many*	Bernard: *Few*
Alice	*Many*	10, 10	10, 20
	Few	20, 10	0, 0

a) (1 mark) Do Alice or Bernard have dominant strategies? Explain.

b) (1.5 marks) Find the Nash equilibrium(s) in pure strategies.

c) (1.5 marks) Find the equilibrium in mixed strategies. Show all your calculations.

QUESTION 1 (4 marks)

Note: the two parts below are independent of each other.

a) (2 marks) Ana maximises expected utility, and her utility from wealth is given by $u(w) = w^{0.5}$. Her initial wealth is 100 and she is offered two investment opportunities: investment *Alpha*, which will result in a net loss of 40 or a net gain of 60, each with 50% probability; and investment *Beta*, which will result is a net loss of 60 or a net gain of 95, each with probability 50% too. The two investments are mutually exclusive, and Ana has no other investment opportunities. Explain what Ana will prefer to do: invest in *Alpha*, in *Beta*, or not to invest in either. Show any calculation that you deem necessary.

b) (2 marks) Succinctly explain what moral hazard is, and how it affect market efficiency.