YLIOPISTOTENTTI - UNIVERSITY EXAM

Opiskelijan nimi / Student name:	Opiskelijanumero / Student number:

Opettaja täyttää / Lecturer fills in:

Opintojakson koodi and nimi / The code and the name of the course:

Koodi / Code 721320S

Tentin nimi / Name Economic Theory 1

Tiedekunta / Faculty:	Business School	
Tentin pvm / Date of exam: 19.4.2016		**Tentin kesto tunteina / Exam in hours: 4**
Tentin nro / No. of the exam: 1. Retace (esim. Tentti, 1. uusinta, 2. uusinta / e.g. Exam, 1. retake, 2. retake)		**Opintopistemäärä / Credit units: 6**
Tentaattori(t) / Examiner(s): Rauli Svento		**Sisäinen postios. / Internal address:** **6OyKKK**

Sallitut apuvälineet / The devices allowed in the exam:

☒ Nelilaskin /
Standard calculator

☒ Funktiolaskin /
Scientific calculator

☒ Ohjelmoitava laskin /
Programmable calculator

☐ Muu materiaali, tarkennettu alla / Other material, specified below:

Tenttiin vastaaminen / Please answer the questions:
☒ Suomeksi / in Finnish   ☒ Englanniksi / in English

Kysymyspaperi on palautettava / Paper with exam questions must be returned:
☐ Kyllä / Yes   ☒ Ei / No

ECONOMIC THEORY 1

Retace 1

19.04.2016

1. Show and explain the structure of modern demand analysis.

2. The production functions are of the form $y = x_1^a x_2^b$ and $y = (\alpha_1 x_1^\rho + \alpha_2 x_2^\rho)^{\frac{1}{\rho}}$, where $a, b > 0$
    , $\alpha_1 + \alpha_2 = 1$ and $\rho < 1$

a) Calculate marginal products of inputs. Are they diminishing?

b) What are the MRTS:s? How do they vary with i) production ii) x_2/x_1 ?

3. Given the production function $f(x_1, x_2) = a_1 \ln x_1 + a_2 \ln x_2$, calculate the profit-maximising demand and supply functions, and the profit function. For simplicity assume an interior solution. Assume that $a_i > 0$.

4. Consider an exchange economy that consists of commodities x and y and two individuals. These individuals have the following utility functions:

$$u^1(x_1, y_1) = \ln(x_1) + \ln(y_1)$$

$$u^2(x_2, y_2) = x_2 y_2$$

and the initial endowments are $(\bar{x}_1, \bar{y}_1) = (5,5)$ and $(\bar{x}_2, \bar{y}_2) = (5,5)$. Solve the general equilibrium for the economy and illustrate it in Edgeworth Box. Verify also that the Walras' law holds.

5. Two California teenagers Bill and Ted are playing Chicken. Bill drives his hot rod south down a one-lane road, and Ted drive his hot rod north along the same road. Each has two strategies: Stay or Swerve. If one player chooses swerve he loses face; if both swerve, they both lose face. However, if both choose Stay, they are both killed. The payoff matrix for Chicken looks like this:

		Player B	
		Left (Stay)	Right (Swerve)
Player A	Top (Stay)	-3,-3	2,0
	Bottom (Swerve)	0,2	1,1

a) Find all pure strategy equilibria.

b) Find all mixed strategy equilibria.

c) What is the probability that both teenagers will survive?