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:

721333S

Industrial Organization

Tiedekunta / Faculty: Oulun yliopiston kauppakorkeakoulu

Tentin pvm / Date of exam: 1.6.2017	Tentin kesto tunteina / Exam in hours: 3
Tentin nro / No. of the exam: 3 (esim. Tentti, 1. uusinta, 2. uusinta / e.g. Exam, 1. retake, 2. retake)	**Opintopistemäärä / Credit units: 6**
Tentaattori(t) / Examiner(s): **Mikko Leppämäki**	**Sisäinen postios. / Internal address:** **6 OyKKK**

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

Suomenkielisessä tutkinto-ohjelmassa olevalla opiskelijalla on oikeus käyttää arvioitavassa opintosuorituksessa suomen kieltä, vaikka opintojakson opetuskieli olisi englanti. Tämä ei koske vieraan kielen opintoja. (Kts. Koulutuksen johtosääntö 18 §)

In a Finnish degree programme a student has a right to use Finnish language for their study attainment, even though the language of instruction is English, (excluding language studies) even when the language of instruction is other than Finnish. (See the Education Regulations 18 §)

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

University of Oulu
Oulu Business School
Industrial Organization
Exam (3 hours), June 1, 2017

1. Three firms are considering entering a new market. The payoff for each firm that enters is $\frac{150}{n}$, where n is the number of firms that enter. The cost of entering is 62.

(i) Find all the pure strategy Nash equilibria.

(ii) Find the symmetric mixed strategy equilibrium where all three players enter with the same probability.

2. In a two-period economy one consumer wishes to buy a TV set in period 1. The consumer lives for two periods, and is willing to pay a maximum price of 100 euros per period of TV usage. In period 2, two consumers (who live in period 2 only) are born. Each of the newly-born consumers is willing to pay a maximum of 50 euros for using a TV in period 2. Suppose that in this market there is only one firm producing TV sets, that TV sets are durable, and that production is costless.

(i) Calculate the prices the monopoly charges for TV sets in period 1 and 2.

(ii) Answer the previous question by assuming that in the first period a consumer who lives for two periods is willing to pay no more than 20 euros per period for TV usage.

3. The two firms (1 and 2) that produce incomplete substitutes and compete in prices have the demand structure as follows

$$q_1 = 12 - p_1 + \frac{1}{2}p_2$$

and

$$q_2 = 12 - p_2 + \frac{1}{2}p_1.$$

Assume that marginal cost of production is zero ($c = 0$).

(i) Derive and draw the reaction (best reply) functions.

(ii) What is the pure strategy NE of this game? Derive equilibrium prices and profits.

(iii) Suppose the firms merge and act afterwards like a monopoly. How much each firm will benefit from the merger?

(iv) Suppose now firms choose prices sequentially. Firm 1 is a leader and Firm 2 is a follower? Derive the Stackelberg equilibium and show that the follower is better off. Discuss.

4. Peer-to Peer markets also known collectively as a sharing economy has emerged as an alternative way of supplying goods and services to consumers. In some markets the economic impact of a sharing economy "production mode" on the incumbent firms following more traditional ways of doing business have been substantial. It is only relatively recently that economists have started to pay attention to these new ways the market and marker participants operate:

i) How peer-to peer markets solve the market design problems in terms of search, matching customers and producers, pricing of goods and services and sustaining reputation?

ii) What are the simple economic principles and underlying economic conditions that make peer-to peer market to flourish?

iii) Based on what we have witnessed until now and having an understanding on the basic economic forces behind the success of peer-to-peer markets, in which markets/industries we can expect to see sharing economy "production mode" to appear in future?

<center>THE QUESTIONS MUST BE RETURNED</center>