Course: S-38.041
Date: 09.05.2004 at 9-12
Teacher: prof Heikki Hämmäinen

Each question is worth max 6 points. Answers can be written in English, Finnish, or Swedish. Answers must be short and concise. Please indicate if you have participated the voluntary mobile operator business game session to compensate one question.

1. Explain the following techno-economic terms briefly (max 5 sentences per term).
   a. Bill-and-keep
   b. Nash equilibrium
   c. Long-run incremental cost
   d. Price discrimination
   e. Tatonnement
   f. Congestion pricing

2. Explain schematically the consumer's problem in terms of utility function, product price, and producer's product cost.

3. Assume a market with positive network effects and N potential customers (N=100) indexed by i = 1…N. Willingness to pay of customer i is $u_i(n) = ni$ for a unit of good given that n other customers will be using it. Customers can always return the good and get refund if the price goes below utility. Assume price p=800 posted. Calculate the possible equilibrium points and define conditions for reaching them. Define the socially optimal point and conditions for reaching it.

4. Describe the business ecosystem of a network operator by drawing a diagram of the business roles and the relationships between the roles. What is the added value of each role?

5. List the principles of effective regulation.