Written Exam for the B.Sc. in Economics Summer 2010

Microeconomics A

Final Exam

11 June 2010

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

If you are in doubt about which title you registered for, please see the print of your exam registration from the students' self-service system.

Question 1

a) Consider a firm that is profit maximising. What will we expect to be observing when we compare the firm's behaviour in different time periods?
b) Show that when a firm is profit maximising then its factor demand will decrease when the price on the factor increases.

Question 2

In the CAPM model we have a β parameter. Explain what this parameter implicates in this model and why a negative value has a specific interest.

Question 3

Consider a Koopmans-economy with one consumer having preferences over two commodities that can be represented by the utility function $u(x_1, x_2) = x_1 x_2$

Let commodity 1 be a good that can be transformed into commodity 2 in a firm using the production function $y = q^{½}$, where $q \geq 0$ is input of commodity 1 and y is the firms output of commodity 2.

a) Explain what we must assume about the agents in this economy to be able to complete the analysis.

Assume that the endowment in the economy is $(\omega_1, \omega_2) = (12, 0)$ and let the price on good 2 be equal to 1.

b) Find the equilibrium in this economy? Is this equilibrium Pareto optimal – why/why not?

Question 4

a) Using the Slutsky equation, explain what a Giffen good is and what must be satisfied for a good to be Giffen good.
b) The special thing about Giffen goods is sometimes also satisfied for non-Giffen goods. Explain what must be satisfied for this to be the case and give an example.

Question 5

Iris wants to consume in two time periods. She has preferences for consumption in the two time periods that can be described by the utility function $u(x_1, x_2) = x_1^{½} x_2$. She has an income m in period one that can be saved and used in period two. There is no income in period 2, where we assume that she is retired. The interest rate is r and assume that the price on the consumption good is 1.

a) What is her consumption in the two time periods?
b) What can we say about Iris' welfare following the change in the interest rate from 2 to 1 per cent? – you should calculate the consumer's surplus for Iris as part of your answer
c) What is the income change Iris need in period 1 such that she is unaffected by the increase in the interest rate? Relate this income change to the consumers surplus you calculated in c)
d) What happens with your answer to the latter part of c) if her preferences had been quasi-linear?

Question 6

Consider a tax on income. Let the tax generate a revenue of B Euro. Assume that the revenue is paid back to the consumers. Explain why such a policy is not 'neutral' and illustrate this in a diagram.