Written Exam for the B.Sc. in Economics summer 2012

Microeconomics A

Final Exam

9 August 2012

(3-hour closed book exam)

Question 1
Assume that Goran lives in two periods and that he in period 1 has an income of 50,000 and in period 2 he has an income of 500,000.

Assume that we have 2 different consumer goods - beer and other consumption goods. The price on other consumption goods is equal to 1 and the price on beer is equal to p_b. The prices are the same in the two periods.
Goran has preferences over the two goods, that can be described by the utility function $u(x_{1,t}, x_{2,t}) = 5000 \ln(x_{1,t}) + x_{2,t}$ where $x_{i,t}$ is demand of good i in period t.

a) If we do not have any financial market, what will Goran's consumption of the two consumer goods be in the two periods? Comment on the results.

Goran is a very impatient person, who would prefer a higher consumption today rather than postponing everything until tomorrow. This means that he has preferences over consumption today, c_1 and tomorrow c_2 that can be described by the utility function $u(c_1, c_2) = 3 \ln(c_1) + \ln(c_2)$. Where c_t can be considered as the money he spends on consumption in period t.

b) If we have a financial market and that the interest rate is 5%, what will Goran's total expenditure be in the two periods. With these changed budgets in the two periods, what will the resulting demand of the two consumer goods be in each period?
c) The government is afraid that the current very low interest rate will lead to an overconsumption in the first period with inflation being the result. It therefore suggests to introduce an interest tax, τ %, that is added to the interest rate, r.
How will the interest rate influence Goran's consumption in the two periods and how about his total welfare? Explain.

Question 2
Christine has 60 hours per week available (she is fast asleep for the remaining hours). She has preferences for leisure and a general consumer good. If she chooses to sell some of her available time to an employer, she can earn a wage of 80 kr per hour. Christine's preferences for leisure and the consumption good is described by the utility function $u(l, c) = l^{\frac{1}{3}} c^{\frac{2}{3}}$

a) What is Christine's income per week?
b) Assume that Christine is prescribed a new energy pill that reduces the number of hours she needs to sleep by 20 hours. How does this influence Christine's consumption of the consumer good?
c) Assume that the government introduces an income tax t=0.25 (25% of the income is paid in tax). How does that influence Christine's labour supply? Can we always be certain that the effect of an income tax works this way?
d) If the government returns the tax revenue and gives it back to Christine as a lump sum subsidy, will Christine be as well of as before? (Hint: you could consider the size of the subsidy and compare this to the size of a Hicks compensation)

Question 3
Argue why a decrease in the income tax rate may or may not lead to an increase in labour supply. You should relate to a mathematical model in your arguments

Question 4
Comment on the statement:
When we calculate the consumer's surplus as the area under the ordinary demand curve, we always overestimate the 'true' dead weight loss of e.g. income taxes.

Question 5
Consider an exchange economy with private ownership.
Then consider the following statement:
Any efficient allocation has to be such that everyone would agree to switch to that allocation from the endowment allocation - or at least no one would object to such a switch.

Argue whether the statement is true or false and why this must be the case.

Question 6
A price increase always leads to a decrease in:
a) The compensation demand
b) The demand

Which of a) or b) do you think is correct? Show or prove why your answer is correct.