Course name: Public Finance

Course code: EC2106

Examiner: Mikael Priks

Number of credits: 7,5 credits

Date of exam: Saturday, 2015-01-17

Examination time: 3 hours

Write your identification number on each paper and cover sheet (the number stated in the upper right hand corner on your exam cover).

Do not write answers to more than one question in the same cover sheet. Explain notions/concepts and symbols. Only legible exams will be marked. No aids are allowed.

The exam consists of 3 questions. The first and second question give 40 credits each and the last question gives 20 credits, 100 points in total. For the grade E 45 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

If you think that a question is vaguely formulated: specify the conditions used for solving it.

Results will be posted on mitt.su.se (my studies), on 6 February at the latest

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Good luck!

Exam, Public Finance

Mikael Priks

This exam consists of three questions. The first and second question give 40 credits each and the last question gives 20 credits. p denotes prices and q quantities. To get full credit, you need to state and explain your results clearly. Good luck!

Taxation (40)

a) Explain the Laffer curve by using a figure.

b) Assume that the government imposes a unit tax on the consumers of a good. Show in a figure why the tax reduces welfare. Why does a second tax on top of an already existing equally large tax reduce welfare by more than the existing tax?

c) Assume that the government decides to impose a unit tax on the producers of the medicine insulin which individuals with diabetes take. Which are the plausible effects on the tax incidents on producers relative to consumers, i.e., the consumer and producer burden? Show in a figure and explain.

d) Assume that the demand for a good is given by p=20-q. A monopolist solves the following problem

$$\max_{q} pq - q^2 - tq$$

where t is the tax rate which the producer has to pay for every unit of production. Show how the tax t=8 affects the consumer and producer burden compared to a situation without a tax.

Public goods (40)

a) Define an impure public good. Give two examples of impure public goods.

b) What does altruism mean? Discuss the empirical evidence on altruism and how it can reduce free riding.

c) What is the condition for optimal provision of public goods? Assume that individual A has the marginal valuation p=10-q for a public good and individual B has the valuation p=2. The marginal cost for proving the good is 1. What is the optimal level of provision? Show in a figure.

d) Two individuals A and B live on the same road. They choose between consuming a private good, X, and spending money on maintenance of their joint road, R, which is a public good. The total amount of spending on road maintenance is the sum of the amount provided by each individual so R=R_A+R_B. Each individual i has the utility U=2lnx_i+lnR. The budget constraint of individual A is 100=x_A+R_A and the budget constraint of individual B is 50=x_B+R_B. Show how much each individual chooses to

contribute to the road when the decisions are taken independently of each other. Show how the total spending on the road differs from the optimal total spending from the society's perspective and explain. Discuss without showing formally how the divergence in income in this question affects total spending on the road.

Theoretical tools (20)

a) State the first fundamental theorem of welfare economics.

b) Show a utilitarian social welfare function.