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AFRICAN ECONOMIC RESEARCH CONSORTIUM (AERC)

Collaborative MA Programme in Economics for Anglophone Africa (Except Nigeria)

JOINT FACILITY FOR ELECTIVES
JULY – OCTOBER 2005

PUBLIC SECTOR ECONOMICS

Second Session: TEST

Time: 11.00 – 13.00 **Date: Friday, September 09, 2005**

<u>Instructions</u>: Answer *any* TWO Questions

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1. (a) Assume that an excise tax at rate, *t,* per unit output was imposed on a producer. Using a diagram, demonstrate how the burden of the tax would be shared between the producer and consumers (assume the normal upward-sloping supply curve and downward sloping demand curve).

   (b) (i) Based on (a) show that the question of who pays the tax can best be answered with information about price elasticity of demand and price elasticity of supply.

   (ii) From your results in (i) suppose the elasticity of demand is infinitely elastic, who bears the burden of the tax? How would this look in a graph?

   (iii) From (i) suppose the elasticity of demand is perfectly inelastic, who bears the burden of the tax? How would this look in a graph?

2. (a) Demonstrate that to determine the optimal linear income tax, it is necessary to minimize the excess burden associated with achieving a desired redistribution of income.

   (b) Without derivation state the results and conclusion of *the inverse elasticity rule* in the context of optimal commodity taxation. How does its results resemble those of the *Ramsey rule*?.

(c) What is the excess burden of raising $500,000 in tax revenue if the elasticity of demand is 0.5 and the tax rate is 20%?

3. (a) Show the effect of an increase in interest rate to a borrower and a lender in a two-period inter-temporal model of consumption decision in a perfectly competitive market.

(b) Assess differences in effect of introduction of lump-sum tax, income tax and an indirect tax on present and future consumption of an individual in a two-period inter-temporal model of consumption decisions in a perfect market.

Good Luck