



AFRICAN ECONOMIC RESEARCH CONSORTIUM (AERC)

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

JOINT FACILITY FOR ELECTIVES
JUNE – OCTOBER 2005

PUBLIC SECTOR ECONOMICS

Second Session: Final Examination

Time: 09.00 AM – 12.00 Noon

Tuesday, September 27, 2005

INSTRUCTION: Answer THREE Questions; TWO Questions from Section A, ONE Question from Section B. Each Question Carries 20 Marks. *Allocate your time accordingly. Be brief and to the point.*

SECTION A: Theory of Taxation

Question 1

- (a) Under what circumstances will the income tax induce more labour supply?
(5 Marks)
- (b) Given a utility function $U = U(Y, L_o - L)$ and budget constraint $Y = wL + I$; where Y is net income, L is hours spent working, L_o is total number of available hours so that $L_o - L$ is equal to leisure hours, w is wage rate and I is non-wage income; show both algebraically and using graph how the introduction of a proportional income tax affects the labour supply. (15 Marks)

Question 2

- (a) Under a monopolistic market economy, assume that there are two firms - one with a constant elasticity of demand function ($Q = P^{-\eta}$, where $\eta > 0$ is the elasticity of demand) and the other with a linear demand function ($Q = a - bP$), where Q and P are output and price, respectively. A monopolistic firm with constant elasticity of demand function is capable of over-shifting the tax but this is not the case for a monopolistic firm with a linear demand function. Prove, showing your derivation, that their power to shift the tax are a function of the differences in the slopes of the firm's marginal revenue and demand functions. How would these appear graphically? **(12 Marks)**.
- (b) "For any given revenue raised by the government, the monopolist's output will be higher with *ad valorem* tax than with a specific tax. On this ground, an *ad valorem* tax is superior to a specific tax". Verify. **(8 Marks)**

Question 3

- (a) Derive the *inverse elasticity rule* and show the similarity of its results to those of the *Ramsey rule*. What message does the rule carry as regards optimal commodity taxation? **(8 Marks)**
- (b) Corlett and Hague (1953) proved an interesting implication of the Ramsey rule, that is: "When there are two commodities, efficient taxation requires taxing the commodity that is complementary to leisure at a relatively high rate". Discuss, showing that their result may conflict with the fairness objective of taxation; and how distributional consequences of taxation might then be considered. **(12 Marks)**



SECTION B: Tax Policy and Other Issues

Question 4

There are three major principles of tax design, namely: equity, efficiency, and administrative feasibility.

- (a) Atkinson (1977) shows, using a targets-and-instruments assignment-type framework, how the problems of optimal design of direct and indirect taxation can be resolved to attain the first two major principles of tax design. Outline Atkinson's arguments and assess their practical importance **(12 Marks)**
- (b) How does the level of a country's development affect its tax structure? What evidence is there that countries at similar stages of development have similar tax structures. **(8 Marks)**

Question 5

- (a) What are the advantages of a decentralized system of government? Show that compared to centralization, decentralization of government allocative function may lead to welfare gains. **(10 Marks)**
- (b) 'There is concern that financing of government deficits may reduce or "crowd-out" private investment'. Discuss, in the context of relationship between deficits and savings/investment **(10 Marks)**