YORK UNIVERSITY

Faculty of Arts

Final Examination

April 11 2002

Economics 4080.03MW : Public Finance II

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time=2 hours

The exam contains two sections, A and B. Section A is worth 40 % of the marks, section B 60 %. Note that there is some choice in each section.

A : 40 %(5 % per question)

Explain **briefly** the significance for the economics of public expenditure of any **8** of the following 10 terms.

1. nonrival good

2. the free–rider problem

3. marginal social cost

4. voting paradox (or Condorcet paradox)

5. principle of minimum differentiation (in representative democracy)

6. actuarially fair insurance premium

7. adverse selection

8. Samaritan's dilemma

9. intergovernmental competition

10. equalization

B : 60 % (15 % per question)

Answer any **4** of the following 8 questions.

1. What are all the efficient allocations in the following two–person, two–good economy? Person 1's preferences can be represented by the utility function

$$U(x_1, Z) = \ln x_1 + 2 \ln Z$$

where x_1 is her consumption of a pure private good and Z is the amount provided of a pure public good ; person 2's preferences can be represented by the utility function

$$U(x_2, Z) = 2 \ln x_2 + \ln Z$$

where x_2 is his consumption of a pure private good ; the production possibility curve for the economy has the equation

$$x_1 + x_2 + Z = 120$$

2. If the sawdust produced by a small lumber mill raises air purification costs at a small computer equipment assembly plant next door, what sort of government intervention is required to correct the externality?

3. Suppose a committee had seven members, whose ages are : 20, 40, 45, 50, 55, 60 and 65. The committee has to decide on how much to spend on plumbing improvements. The overall benefit the committee members perceive from these improvements depends only on their ages. A person of age n thinks the benefits would be B if the committee decided to spend x on plumbing (where n is measured in years, and x is measured in millions of dollars), with

$$B = 4nx - x^2$$

(so that, for example, the 40–year–old's benefits from spending x million dollars are $160x - x^2$). If any committee member can propose a level of spending, and if all proposals are voted on using pairwise majority rule, what is the likely outcome of the committee's decision making process?

4. Does logrolling among members of legislative committees lead to a more efficient outcome? Discuss briefly.

5. What budget would a budget–maximizing bureaucrat propose in the following circumstances? The total cost of providing a level of service S for the bureau is

$$TC = 100S + 6S^2$$

The total benefits that politicians (who vote on the proposed budget) receive from a service level of S are

$$TB = 400S - 4S^2$$

6. What would be the advantages and disadvantages of changing the Canada Pension Plan into a fully funded pension plan?

7. Under what circumstances would the local public sector provide its outputs efficiently? Explain briefly.

8. What are the similarities and differences among unconditional grants, matching grants, and conditional non–matching grants?

the end