AP/ECON 4380 & GS/ECON 5950 : Final Exam

April 6 2016
2- 4 pm

Do **any 5** of the following 8 questions. All questions count equally.

1. Give an example of a profile of voter preferences, in which one alternative is a Condorcet winner, but that alternative does **not** get the highest score using the Borda count.

2. Prove the following result, which is used in the proof of Arrow's Impossibility Theorem :

   If some group of voters is *decisive* over some pair of alternatives, then there is a **strictly smaller** group which is also decisive over some pair of alternatives, if the rule for the social ordering obeys the axioms of unrestricted domain, the Pareto principle (if everyone ranks x above y, then the ordering ranks x above y), and the independence of irrelevant alternatives.

   [A group G is *decisive* over the pair of alternatives x and y if the social choice rule ranks x above y whenever : every person in that group G ranks x above y and everybody outside the group G ranks y above x.]

continued

3. Describe the Nash equilibria for the "citizen–candidate" model, in which **exactly 2** candidates choose to run for office in equilibrium.

   [In the "citizen–candidate" model, candidates cannot change their platforms : all voters know exactly the preferred policy of each potential candidate. Citizen–candidates care about the policy chosen by the winning candidate, find it costly to run for office and would choose to run only to affect that policy.]

4. If the senior administrator wanted only to maximize the size of her budget, what budget would she propose in the following situation?

   A budget consists of a proposed level G of public service provision, and an amount of money T to finance that provision. The budget must be passed by a majority of legislators. There are 101 legislators, with the preferences of legislator i represented by the utility function

   $$U(G,T) = 100 - T - \frac{i}{G+1}$$

   The actual cost of 1 unit of G is \$1. If the budget is defeated by the legislature, then $T = G = 0$.

5. If no single political party has a majority in the legislature, how much does it matter which party gets chosen to have the first try at forming a government?

6. Does increased mobility among political jurisdictions make the local public sector more responsive to residents' preferences? Explain.

continued

7. Discuss the appropriate level for the provision of education in the following model : 3 local jurisdictions, or 1 national jurisdiction?

   All people have the same preferences, represented by the utility function

   $$U(c, g) = cg$$

   where c is the person's after–tax income [measured in **thousands of dollars**], and g is the per capita level of public education spending.

   There are 1000 people with income 36, 1000 people with income 60, and 1000 people with income 90.

   The total cost of providing g units of the public good to each of N people is $6000g$. This is a total cost : the cost per person is $6000g/N$.

   People are perfectly mobile. The public good must be financed by a head tax. If the public good is provided at the national level, the quantity provided must be the same for everyone.

8. Suppose that there is some public good, which must be provided **uniformly** to all residents of a country.

   There is a national government, which chooses the quantity to provide of this public good, as well as choosing the levels of cash transfers to different regions. (Different regions can get different transfers.)

   Suppose that **2** national parties compete to form the national government. These parties do not know voters' preferences perfectly ; there is some uncertainty.

   Which of the following two methods of electing the government will result in a higher level of spending on the public good? (i) the party which gets the highest number of votes nationally forms the government ; (ii) each different region elects a representative to a national parliament ; the party which elects the most regional representatives forms the government.

   Explain briefly.

end