Mookherjee EC 721, Fall 2014

Ec721 PROBLEM SET 1

1. Suppose the policy space is a one dimensional real variable p, there are a finite (odd) number of voters each with single peaked preferences, with a median ideal point p_M^*. Two parties $i = A, B$ compete in an election, and select policy platforms p_A, p_B before the election, to which they are subsequently committed, in the event that are elected. In contrast to the Downsian model, suppose that each party i has (ideological) policy preferences represented by a von Neumann utility function $W_i(p)$ which is also single peaked, with ideal point p_i^*. So if ϕ_A denotes the probability that party A wins, party i's objective is to maximize $\phi_A W_i(p_A) + (1 - \phi_A)W_i(p_B)$.

(a) Suppose that p_M^* lies in between p_A^* and p_B^*. What is the set of Nash equilibrium policy platforms? Provide complete proofs.

(b) Now suppose that $p_B^* > p_A^* > p_M^*$. What can you say now about the policy that will be chosen by the winning party (in Nash equilibrium)?

2. Consider the Besley-Coate (1997) model of citizen candidates, applied to the following economy. There are four policies p_0, p_1, p_2, p_3 and three types of citizens $i = 1, 2, 3$. Citizens care only about policies chosen by elected candidates and not the latter's identity. Preferences for every citizen are strict between every pair of policies. Policy p_0 is ranked last by every citizen, this results when no candidate runs for election. Type 1 citizens prefer p_1 to p_2 to p_3. Type 2 citizens strictly prefer p_2 to either p_1 or p_3. Type 3 citizens strictly prefer p_3 to p_2 to p_1. The proportion of type 2 citizens is less than a third of the population, while there are an equal proportion of citizens of types 1 and 3.

Any citizen can run for office, at an entry cost of δ which is positive but close to zero. In the following, consider equilibria for all sufficiently small values of δ.

(a) Does a single candidate equilibrium exist? If so, characterize the set of such equilibria.

(b) Does a two candidate equilibrium exist? If so, characterize the set of such equilibria.

(c) Does a three candidate equilibrium exist? If so, characterize the set of such equilibria.