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ECON 501B

ECON 501B: Problem Set 5

Due: Thursday, October 4, 2018

Instructions: Answers should be complete proofs of a claim.

Question 1: Fix a many-to-one environment $\mathcal{E} = (T, B; (q_t : t \in T); (\succsim_t : t \in T), (\succsim_b : b \in B))$ that satisfies responsive preferences. Show that a match is stable in $\mathcal{E}$ if and only if it is stable in the induced one-to-one market.

Question 2: Fix a many-to-one environment $\mathcal{E} = (T, B; (q_t : t \in T); (\succsim_t : t \in T), (\succsim_b : b \in B))$. This question gets at the ideas behind the rural hospital theorem.

1. Suppose preferences are strict and responsive. Show the following: If μ and μ' are stable matches with $|\mu(t)| < q_t$, then $\mu(t) = \mu'(t)$.

2. Discuss the conceptual interest in showing the above result.

3. Suppose preferences are strict and responsive. Let μ and μ' be stable matches with $|\mu(t)| = q_t$. Must $\mu(t) = \mu'(t)$? Either provide a proof or a counterexample.

4. Suppose preferences are responsive but not necessarily strict. Let μ and μ' be stable matches with $|\mu(t)| < q_t$ and $|\mu'(t)| < q_t$. Must $\mu(t) = \mu'(t)$? Either provide a proof or a counterexample.

5. Suppose preferences are strict but not necessarily responsive. Let μ and μ' be stable matches with $|\mu(t)| < q_t$ and $|\mu'(t)| < q_t$. Must $\mu(t) = \mu'(t)$? Either provide a proof or a counterexample.