Decisions and Uncertainty: Final Exam

December 21, 2017

Please, answer the following questions. The total number of points is 60. ***Time allowed****: two hours. PLEASE PLEASE, make an effort to write in a legible and organized fashion.*

3. (30 points) The (traditional) Anscombe-Aumann approach to modelling Subjective Expected Utility (SEU).

(a) (5 points) Describe in as much detail as you can the decision setting that is used, and its mathematical properties.

(b) (10 points) State the axioms for the SEU model in this setting, and discuss them as much as you can. Is there a different way to obtain state independence?

(c) (10 points) State the representation theorem (including uniqueness) and describe intuitively how it is proved.

(d) (5 points) Finally, describe how you could measure subjective probabilities in this setting.

4. (30 points) The "conditional" version of the Subjective Expected Utility (SEU) model of Savage.

(a) (5 points) Explain the difference between the setting used in Savage's original model and the conditional setting.

(b) (10 points) State the axioms used (in the case of the Savage axioms, please write the statement), and possibile comment on the meaning of the ones different from Savage's.

(c) (15 points) Sketch the proof of the representation theorem, in as much detail as time allows.