1. (20%) Identify and or Define (in a short paragraph):

A. Knightian Uncertainty

B. Rational Expectations

C. Bayesian Learning Function

D. Rational Ignorance

E. Condorcet Jury Theory

2. (30%) Suppose that Al has a Cobb-Douglas utility function U = XY, where X is a good with a known price of Px and Y has an uncertain price distributed in a manner that Py = P - aS. Suppose that Al has W dollars to spend on X, Y, and S and that the cost of each unit of search is C.

A. Initially, ignore search possibilities (let S = 0), and characterize Al's demand for Y.

B. Now determine the Al's demand for price information by characterizing the optimal amount of search to engage in. (Hint: the demand for X has a similar form. Substitute X* and Y* into Al's utility function, differentiate with respect to S to find the optima. Don't forget to take account of C.)

C. Explain briefly why this "search" characterization of the demand is important contribution to economics and, more generally, ot the philosophy of science.

D. Explain briefly some limitation of this representation of the demand for information, both technically in your model and conceptually in more general search representations of the demand for information.

3. (30%) Suppose that two persons are in a "signaling game." Each person has 2 units of an input (L) that be used for "apple polishing" or for producing output via team production. Team production produces a useful output: $Q= 4(L_A + L_B)$ which is shared equally among the two team members and their boss who owns a fixed capital good in which the team production take place.

A. (5%) Initially assume that "apple polishing" is without value to any of the three people. Use a 3 by 3 game matrix to characterize decision making in this "easy going" team with 0, 1, and 2 units of L contributed to the joint enterprise by Al and Bob.

B. (10%) Now assume that "apple polishing" is privately productive, but not socially productive. One unit of Apple polishing now generates private income equal to 1.5 units of the team's output. Use a 3 by 3 game matrix to characterize decision making by Al and Bob in this "apple polishing" team with 0, 1, and 2 units of L contributed to the joint enterprise.

C. (5%) Game A can be thought of as a team production setting in which output can be directly observed and Game B can be thought of as a case in which output cannot be perfectly observed. What mistake is the "boss" making in game B?

D. Can a fixed wage for units of labor improve the signaling game? If so why? What is the informational value of the "apple polishing" signal?

4. (20%) Informative essays (3 paragraphs), **answer only two**:

A. Compare and contrast Knight's ideas of risk and uncertainty with the contemporary ideas of rational expectations and rational ignorance? In what sense, if any, has progress been made?

B. Compare and contrast Hayek's theory of the use of knowledge in society with Akerlov's lemon problem? What are the fundamental differences? How are they similar?

C. Summarize briefly the Bayesian representation of information and learning. Explain briefly its strengths as a representation of knowledge and knowledge improvement, then explore its weaknesses. Is complete certainty ever be rational in a Bayesian model?

(Your completed exam should be e-mailed to me in pdf or doc formate at congleto@gmu.edu. The exams are due at the beginning of class next week. Your e-note's title should be Information and Choice Exaam. Be sure to include both you name and student number on the exam. Good luck!)