Do Not Turn This Page Over Until You Are So Instructed!

This exam has 25 points. There are six questions on the exam. Question 1 is worth 5 points; the other questions are worth 4 points each. Put your answers to the exam in a blue book or on blank sheets of paper.

Answer the questions using as much precision and detail as the time allows. Correct answers which are unsupported by explanations will not be awarded points.
Answer all of the following six questions.

1. [5 points] Explain Figure 1. This includes defining the terms used there and describing the economic behavior it illustrates.

2. [4 points] What does the Condorcet Paradox have to do with this course? (You do not have to give an explicit example of the Paradox but you should describe in general terms what it is.)

3. [4 points] Distinguish between option value and existence value.

4. [4 points] What is the travel cost method? What is one disadvantage that it has?

5. [4 points] What is the meaning and significance of “WTP < WTA”?

6. [4 points] In your personal opinion, should “disaster aversion” influence the way policy makers make decisions under uncertainty? Why or why not? (You should define “disaster aversion” in your answer.)
Figure 1

$/unit

$/unit

MC + MEC

MC

MR

Q

MEC

Q

MNPB
1. MR, MC, MEC, MNPB
   \[ \frac{\Delta MR}{\Delta Q} \]  
   A cost of pollution/\Delta Q
   \[ \frac{\Delta MC}{\Delta Q} \]  
   MR - MC

1. Firm will want to be at MR = MC \iff MNPB = 0; else if MR > MC, want to \( + Q \),
   Society
   MR > AC + MEC \iff MNPB = MEC
   MR < AC want to \( + Q \)

2. If society uses majority voting to decide issues, voting cycles could occur
   \( \text{where } A \not\preceq B, B \not\preceq C, \text{ but } A \preceq C \).

   So finding a good social decision rule is hard.

2. In Econ.3250 we have to specify what society should do if the free market fails,
   so we have to specify a social decision rule. This is not trivial. Majority
   voting may have intuitive appeal, but suffers from this defect.

3. Option value: value because you may want to use the resource yourself in the future
   Existence value: you may never want to use the resource in the future, but you may still
   value its existence

   Both these amounts you'd be willing and able to pay to obtain these values.

4. Travel cost: visitors' value for a site must be at least as large as the cost they
   paid to get there; so if you measure the latter, you've put a lower
   bound on the former

   Problems:
   - Valuation of time cost of travel (for - ?)
     - I trip to more than one destination
     - House purchase decision
     - Local visitors
       - "Substitute sites"  
       - travel cost of A \& B might be > but
         A has gone because he really likes this
site whereas B has gone because there's nothing else close to him

5) willingness to pay to avoid suffering an environmental damage <
   willingness to accept compensation if that damage occurs

1) This is not irrational behavior but makes cost-benefit analysis quite hard
   because it's unclear which function

6) "Disaster aversion": 10 deaths in one accident are more feared than
   1 death in each of 10 accidents

Pro argument: people value things this way; it's not up to us to question
   those values, just use them

Con argument: this is irrational, because the outcome is the same either way,
   and all we should care about are the outcomes

Note: a novel pro argument would be that observing the disaster makes you
   increase your subjective probability of a similar disaster occurring

later