AREC 350
Fall 2000

Final Exam

(100 Points)

Please show all your work and label your graphs correctly. Manage your time wisely. ***All questions are worth 10 points.***

1. The Land Care video (Australia) illustrates an important example of grass-roots collective action to solve an environmental problem.

(2)a. What was the problem discussed in the video?

(2)b. Why is free-riding a problem in the case?

(6)c. Use a graph, relating it to the Land Care case, that illustrates the process of forming a coalition, that overcomes free-rider behavior to reach an established goal. Discuss your graph.

2. Suppose the U.S. Forest Service implements a new policy stating that all funded projects must have a benefit-cost ratio of 1.1 or higher over a 10-year planning horizon. The policy also states that all projects must be evaluated with a 6% discount rate. As a Forest Service employee you have been asked to evaluate a campsite improvement project for the Coronado National Forest with the following costs and benefits.

Year	Costs ($ millions)	Benefits
1	.5	0
2	.5	.1
3	.5	.3
4	.4	.4
5	.3	.5
6	.2	.6
7	.1	.6
8	.1	.6
9	.1	.6
10	.1	.6

(7)a. What is the B/C ratio? Should the project be accepted given the policy?

(3)b. Without recalculating your answer, what would be the impact on your answer if the discount rate was 12%? Why?

3. In many environmental disputes, participants may choose to not negotiate because they expect to win in court. Some environmental groups have the stated policy to never negotiate but rather litigate. Using your mutual gains model and an environmental dispute of your choice, illustrate BATNAs and ZOPAs that (a) create limited incentives to negotiate for at least one of the parties and (b) create significant incentives for mutual gains for both parties. Make sure you define BATNA and ZOPA.

4. Some goods and services, particularly in the natural resource sector, do not lend themselves to privatization unless of course property rights with regard to these resources changes dramatically.

(2)a. What is a public good?

(3)b. What two characteristics of goods and services allow us to understand the need for or absence of public intervention? Please define each characteristic.

(5)c. Place the following resources in the "box" below according to your answer in b.

1. Blue jeans
2. Your car
3. Coronado National Forest
4. Street lighting
5. Private Education
6. Public Education

5. In the video *Public* k mining created a number of negative ex se of rural areas and regional economi

(3)a. What is a negative externality?

(2)b. Discuss the major negative externality created by Summitville.

(5)c. Graphically compare and contrast the social and private optimal level of gold production when external costs are present.

6. Negotiation is one of the foundational blocks of the Coase Theorem. The other two blocks are property rights and transaction costs.

(2)a. List the four key characteristics of an efficient and effective system of property rights.

1.
2.
3.
4.

(2)b. Please briefly define transaction costs.

(6)c. Use the environmental economics model to illustrate and discuss the negotiation process between 2 parties when one party creates a external cost for the other party.

7. For nearly seventy years, the federal government has partially protected agricultural producers from global competition and low world commodity prices. Congress has legislated protectionist policies, subsidized interest rates, and crop support prices to protect America's agricultural base. Lobbyists representing the sector's interests have worked long and hard to protect and expand this favorable treatment.

(4)a. What is this activity called in public choice economics and what does it imply for public welfare?

(6)b. Use a graphical model to illustrate your answer in a.

8. Environmental disputes often develop around uncertainty associated with the damages and/or abatement costs associated with a polluting activity. Even scientific knowledge on an issue may not resolve this uncertainty. Use the environmental economics model to illustrate the range of “potential” optimal levels of emissions when uncertainty surrounds estimates of damages and abatement costs.

9. Values and beliefs served as the core or axle of the class' political economy framework throughout the semester. Please respond briefly to the following questions.

(4)a. Why are values and beliefs important considerations in environmental management?

(3)b. Why would two people holding ecocentric and biocentric world views disagree on an environmental issue?

(3)c. Why would a utilitarian and a deontologist disagree on an environmental issue?

10. Please read the attached article from this week's edition of Business Week. Now suppose you are the CEO of an electrical utility company and you believe strongly in business-led environmental management.

(5)a. What would be your business strategy over the next 10 years?

(5)b. Graphically illustrate how innovation could increase the profitability of the electrical utility (assume perfect competition for energy).