Environmental Economics and Natural Resource Management 5th edition Anderson Test Bank

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Name: Answer Key

Final Examination
Environmental Economics and Natural Resource Management

Please show your work clearly in the space provided. Illegible writing will be marked incorrect. If you use the back of a page, indicate that you have done so on the front of the page. Good Luck!

1) Briefly define each of the following terms [4 points each]:

Flow pollutant

Initially damaging, but dissipates into environmental sinks with relative ease.

Risk burden

The harm caused by uncertainty about the outcome. OR: The largest amount the party would pay in addition to the expected cost to avoid uncertainty about the outcome.

Natural monopoly

A firm with such high startup costs that it is difficult for several firms to share the same market. OR: A firm with high fixed costs and decreasing average total cost over the relevant range of production.

Front Page of the Newspaper Test

A test for ethical decision making with the criterion: Would you carry out the contemplated behavior if you knew that a description of it would appear in a newspaper headline?

2) [9 points] Identify a specific method described in the textbook *other than the CVM* for placing a value on each of the following assets and briefly describe how exactly the value would be obtained using that method. *Do not apply the same method more than once.*

i) A national park Method: Travel Cost Method (or hedonic pricing, if they don't use it below)

Use consumers' willingness to pay to experience the national park as a measure of its (use) value.

ii) Safe tap water Method: Avoidance Expenditure Method

Use the value of the expenditure that would be avoided by its presence—in this case the expenditure on bottled water—as a measure of its value.

iii) Human life Method: Hedonic Pricing

Measure the trade-off between money and a small risk of death, and then extrapolate to find the full value of a statistical life. OR: Suppose workers accept $1,000 in exchange for a 1/10,000 risk of death. Then a statistical life is valued at $1,000 × 10,000 = $10,000,000.

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i) A national park Method: _____

ii) Safe tap water Method: _____

iii) Human life Method: _____

3) [4 points] Suppose expanded use of nuclear power would involve a 5% chance of problems causing the release of enough radiation to kill 10 people and an additional 1% chance of the release of enough radiation to

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Environmental Economics and Natural Resource Management
Midterm Exam on Chapters 1 - 10

Please show your work clearly in the space provided. Illegible writing will be marked incorrect. If you use the back of a page, indicate that you have done so on the front of the page. Good luck!

1) Briefly define the following [2 points each]:

option value

The value people place on the option to use a resource in the future.

primary standards for air quality

Standards designed to protect the public health.

precautionary polluter pays principle

Polluters post a bond large enough to cover the worst-case scenario for environmental damage.

perfect price discrimination

Each consumer pays a price equal to her or his willingness to pay.

2) [5 points] Suppose you own a t-shirt factory that can save money by illegally dumping dye into a nearby river rather than disposing of it safely. If you illegally dump the dye, there is a 10% chance that it will cause minor environmental damage for which you will have to pay a $10 million fine. There is also a 15% chance that it will cause health damage to citizens for which you will have to pay a $100 million fine.

a. What is the expected value of the amount you will have to pay in fines? $16 million
Show your work.
(.10)($10 million) + (.15)($100 million)

b. If you would be willing to pay $20 million for insurance that would cover the cost of these fines if imposed, what is your risk burden associated with illegal dumping? $4 million

c. Is this firm risk loving, risk neutral, or risk averse (circle one).

3) [4 points] Suppose a small island economy uses its resources to produce mangos and national parks for tourism. What shape would you expect this economy's production possibilities curve to to have? Concave (or bowed out) Explain why. Because the specialization of resources for mango production and national parks causes increasing opportunity costs.

If this economy is producing on its production possibilities frontier, but it is not producing the socially optimal combination of goods:

a) What type of efficiency is this economy definitely achieving? productive efficiency
b) What type of efficiency is this economy definitely not achieving? allocative efficiency

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