

Name: \_\_\_\_\_ Pledge (sign): \_\_\_\_\_

## Env Studies 201 Test #3

**Point Total:** 100 pts possible

- 5 pts 1. What are *endocrine disruptors*? Be brief (1-2 sentences).
- 5 pts 2. What is 'free riding' in environmental treaties? Be brief (1-2 sentences).
- 8 pts 3. What is the *precautionary principle*? State the main advantage(s) and disadvantage(s) to this approach to risk management.
- 6 pts 4. (a) List three methods *each* for the 'capture' and 'storage' steps in *carbon capture and storage* (CCS).
- 8 pts (b) Explain in some detail one strong argument *for* immediate use of CCS, and one *against*. Use the back of this sheet if necessary.

5 pts 5. (a) What are the main pollutants that degrade water quality? List as many as you can.

5 pts (b) What are the main human activities that produce these pollutants? List as many as you can.

6 pts (c) Which of these activities do you feel is the most damaging to water quality? Justify your choice, and explain how the activity causes problems.

6. The 'invisible hand' of the marketplace can be harnessed to improve environmental quality by creating 'pollution markets.'

6 pts (a) What are two main mechanisms by which this can be done?

6 pts (b) Briefly contrast these with 'command-and-control' (CAC) methods of pollution reduction.

8 pts (c) What are the major advantages of each method? Describe in some detail.

7. Michele Trankina, in her article 'The Hazards of Environmental Estrogens,' states

Female rodents treated with high concentrations of DDT become predisposed to mammary tumors, while males tend to develop testicular cancer. These observations raise the question of whether pharmacological (that is, low) doses of substances with estrogenic activity translate into physiological effects.

8 pts (a) It is common to use laboratory animals (eg, rodents) to study toxicological effects. What other methods are also used? What are the advantages and disadvantages of each (including animal studies)?

6 pts (b) With animal studies, it is common to use relatively high dosage levels and extrapolate effects to lower 'pharmacological' levels. Why is that? Why not just do the animal studies at lower dosages?

6 pts (c) When extrapolating to low doses, for carcinogens it is common to assume a 'linear, no-threshold' model. What does that mean? Why is it often the default assumption? Continue your answer on the back of this sheet if necessary.

12 pts 8. Explain the following figure completely and in some detail. Include a definition of *radiative forcing* and explain how each item effects it, positively or negatively.

