

Name: _____ Pledge (sign): _____

Env Studies 201 Test #2

Point Total: 100 pts possible

- 10 pts 1. The IPAT equation is a simplification of some important factors involved in the use and potential degradation of natural resources. Explain the IPAT equation and use it to briefly outline the concerns of the *neo-Malthusians* and *Technologists*.
- 10 pts 2. Explain the concept of sustainability in terms of flow rates, as outlined by the authors of *Limits to Growth*.
- 10 pts 3. What is 'the hydrogen economy?' Be brief but complete.

10 pts 4. Peter Rossett claims that the Green Revolution—which is credited with increasing global food productivity—actually increases world hunger. This seems counterintuitive; what is the logic behind Rossett's assertion?

10 pts 5. Rachel Carson believes that severe environmental degradation results from what is now called *the pesticide treadmill*. What is the pesticide treadmill, and—according to Carson—how does it increase degradation?

6. The most recent issue of *Scientific American* has an article about doping in sports titled “The Doper’s Dilemma.” In it, the authors use Game Theory to approach the problem of the widespread use of performance-enhancing drugs (PEDs) in some competitive sports. The authors of the study state that the decision of an athlete to dope (or not) is an example of the Prisoner’s Dilemma (PD); hence the title of the article.

11 pts (a) Describe the PD in a little detail as it applies to the “doping game,” in terms of the choices facing a competitive athlete in a world where the competition might (or might not) be using PEDs.

11 pts (b) The PD predicts the “tragedy of the commons.” What is the common property resource that is being degraded by an athlete’s decision to use PEDs?

7. Genetically modified (GM) food: the promise and the peril.

8 pts (a) List four important advantages of using GM crops for food.

8 pts (b) List four significant concerns about GM crops.

12 pts 8. The following two questions concern Annie Leonard's *The Story of Stuff*; **choose one** and answer it in detail and be complete. Circle the question you choose to answer.

(a) The author is disturbed by an overly-cheap radio. Why?

(b) What is the *golden arrow* and what is its significance in terms of natural resource depletion?