**CCS 203 2010**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FIRST Exam**

**Answer each question concisely but completely, answering all parts of the question for full credit. Each question is worth 10 points.**

1. Describe three causes of natural variability in climate over the last 1000 years.

2) Under what conditions might a forest change from being a carbon sink to a carbon source?

1. Provide two explanations for why we are observing relatively faster temperature increases in the arctic.
2. Explain the difference between weather and climate.
3. Explain the Greenhouse Effect. What role do greenhouse gases play in the Greenhouse Effect? List three of the major greenhouse gases.

6) What happens to solar energy when it hits the land surface? What physical attributes of the land surface determine the surface temperature?

7) Describe three ecological impacts that current climate trends have had on Montana’s natural ecosystems.

8) How can biospheric primary production be increased to feed the additional 2+ billion people in the next few decades?

9) What was the concept behind fertilizing the ocean with iron fillings? Did it work? What climate change impacts are currently most important to the oceans?

10) What are “proxy records”? List three types of "proxy records" used in paleoclimatology, and describe the kind of information that can be inferred about the climate from each record.