Final Exam

Tuesday, June 9, 8:00 am - 11:00 am, open note.
Please write your name and student ID number on your blue book.

1. [15 points] Answer 3 of the following 4 questions:
   a. A 2008 statement from the Union of Concerned Scientists asserts, “If emissions continue unabated, the world will face more sea level rise, heat waves, droughts, wildfires, snowmelt, flood risk, and public health threats, as well as increased rates of plant and animal species extinctions.” What is meant in this quote by the word “emissions”?
   b. Advocates of corporate social responsibility encourage corporations to adhere to the triple bottom line. Why might this be difficult for some stockholders to accept?
   c. What is Peak Oil, and what are its implications for schemes to solve our water resource problems through desalination?
   d. Why are biofuels an appealing way to address global concerns about greenhouse warming?

2. [15 points] Answer 3 of the following 4 questions:
   a. Briefly summarize at least two of the major objectives of the the Progressive Automotive X Prize competition.
   b. Name two examples of Smart Growth measures that the city of San Diego has adopted or could consider adopting.
   c. What are Corporate Average Fuel Economy (CAFE) standards, and why are they important for the environment?
   d. Briefly describe two examples of “appropriate technologies”.

3. [35 points] Write an essay on 1 of the following 2 topics:
   a. In a 1998 economic policy study published in the journal Natural Resources Research, Michael Lawrence and Thomas Kornfield stated, “According to many environmentalists, the U.S. transportation sector is being subsidized by federal, state, and local governments. Whether or not road users are, in fact, paying the cost of using roads is a critical issue in supporting sustainable transportation.” In a carefully organized essay, explain why environmentalists might be concerned about transportation, why government is seen to be subsidizing transportation road infrastructure, what the costs and benefits are of subsidizing transportation infrastructure, and what government strategies might be introduced to lessen the environmental impact of transportation.
   b. George Montbiot, a blogger for the United Kingdom Guardian newspaper, posted the following item regarding the forthcoming international climate treaty negotiations scheduled for Copenhagen this coming December:
One of the issues that could sink the talks is the question of “outsourced emissions”. This refers to greenhouse gases produced in one nation on behalf of another. The UK, for example, is comfortably meeting its commitments under the Kyoto protocol only because much of our manufacturing industry has moved to China. Under Kyoto rules, the pollution produced by Chinese factories making goods for the UK belongs to China. The protocol counts only the production, not the consumption, of greenhouse gases. (May 27, 2009)

http://www.guardian.co.uk/environment/georgemonbiot/2009/may/27/monbiot-stern-east-west-deadlock-co2

In a carefully constructed essay, explain why the greenhouse gases generated when Chinese industry produces goods for export are suddenly turning into a major issue. What guidelines did the original Kyoto Protocol impose on Chinese greenhouse gas emissions? Why might new guidelines be expected now? What strategies might be envisioned to avoid “sinking” the talks?

4. [35 points] Write an essay on 1 of the following 2 topics:

a. Scripps Institution of Oceanography has received federal funding to construct a research building. Thus, despite the current state budget crisis, architects are currently working to design a new oceanographic laboratory. In a carefully constructed essay, explain what issues might be considered top priorities in designing a sustainable and environmentally-friendly building in Southern California. Drawing on the examples discussed in class, suggest at least three types of “green” features that the new building might include.

b. On the basis of what you have learned in this class, two decades from now what do you think will be the three leading sources of energy worldwide (for human activities), and why? What are the likely effects on the global environment?