Chapter 8 Questions: DUE A-DAY 2/10 B-DAY 2/11

1. What is the approximate current human global population?
2. How many people are being added to the population each day?
3. Why has the human population continued to grow despite environmental limitations?
4. Do you think this growth is sustainable? Why or why not?
5. Contrast the views of environmental scientists with those of Cornucopian economists and policymakers regarding whether population growth is a problem.
6. Name several reasons why population growth is commonly viewed as a problem.
7. Explain the IPAT model.
8. How can technology either increase or decrease environmental impact? Provide at least two examples.
9. What characteristics and measures do demographers use to study human populations?
10. How does each of these help determine the impact of human populations on the environment?
11. What is the total fertility rate (TFR)?
12. Explain why the replaced fertility for humans is approximately 2.1?
13. How is Europe's TFR affecting its natural rate of population change?
14. Why have fertility rates fallen in many countries?
15. How does the demographic transition model explain the increase in population growth rate in recent centuries?
16. How does the demographic transition model explain the decrease in population growth rates in recent decades?
17. Why are the empowerment of women and the pursuit of gender equality viewed as being important to controlling population growth?
18. Describe the aim of family-planning programs.
19. Why do poorer societies have higher population growth rates than wealthier nations?
20. How does poverty affect the environment? How does affluence affect the environment

FRQ 1 DUE A-DAY 2/14 B-DAY 2/18

The figure below shows the age structures of human populations in three countries, *X, Y,* and *Z.*
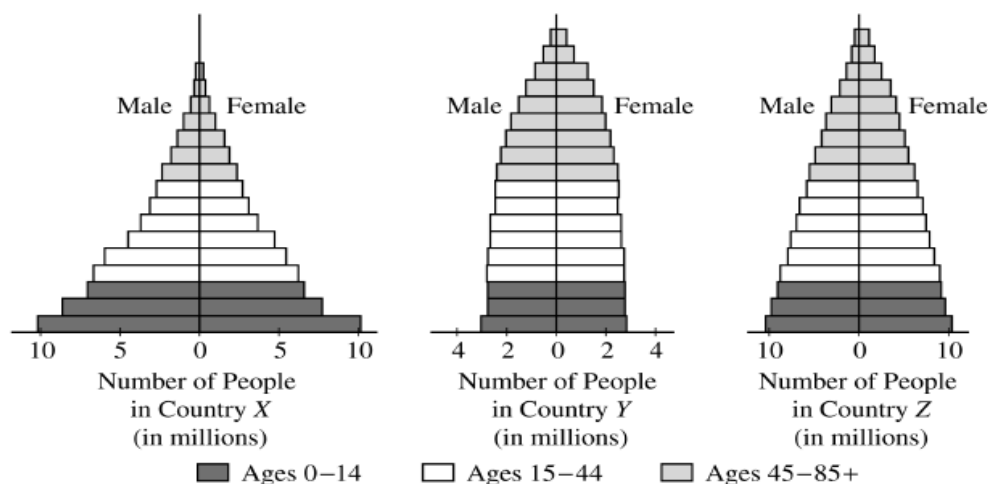
(a) Which of the three countries has the largest rate of population growth? Which has the smallest? **Explain.**
(b) **Compare** the infant mortality rates that are likely in Countries *X* and *Y*. **Explain your reasoning**.
(c) **Discuss** the changes in both the birth rate and the death rate for a country making the transition from a pre-industrial society to an industrial society.
(d) **Describe** one incentive that the government of a country could offer its citizens that would favor a reduction in the growth rate of its population. **Explain** how this incentive would work, and **describe** one possible drawback.

1. What kinds of techniques have people employed to increase agricultural food production?
2. How did agricultural scientist Norman Borlang help inaugurate the green revolution?
3. Explain how pesticide resistance occurs.
4. Explain the concept of biocontrol.
5. List several components of a system of integrated pest management (IPM.)
6. About how many and what types of cultivated plants are known to rely on insects for pollination?
7. Why is important to preserve the biodiversity of native pollinators?
8. What is recombinant DNA?
9. How is a transgenic organism created?
10. How is genetic engineering different from traditional agricultural breeding?
11. How is it similar?
12. Describe several reasons why many people support the development of genetically modified organisms.
13. Name several uses of such organisms that have been developed so far.
14. Describe the scientific concerns of opponents of GM crops.
15. Describe some of their other concerns.
16. Name several positive and negative environmental effects of feedlot operations.
17. Why is beef an inefficient food from the perspective of energy consumption?
18. What are some economic benefits of aquaculture?
19. What are some negative environmental impacts of aquaculture?
20. What are the objectives of sustainable agriculture? What factors are causing organic agriculture to expand?

FRQ 2 DUE A-DAY 2/21   B-DAY 2/24

The world's population grew from approximately 2.6 to 5.2 billion between 1952 and 1987. The green revolution is credited with allowing the world's food supply to keep pace with the rapid growth of human population during that time. The replacement of traditional crops with high-yielding monocultures is central to agricultural practices associated with the green revolution.

a) Assuming that the population growth during this time period followed an exponential model, **calculate** the average annual population growth rate of the world between 1952 and 1987 as a percentage. (HINT: Think about the Rule of 70)

b) **Describe** ONE advantage and ONE disadvantage associated with the farming of monocultures.

c) Another agricultural practice associated with the green revolution is the intensive irrigation of crops. **Describe** TWO negative environmental effects associated with intensive irrigation.

d) Other than the extensive use of monocultures and the intensive irrigation **identify** and **describe** TWO additional agricultural practices associated with the green revolution and for each practice **describe** ONE environmental disadvantage associated with it.

CHAPTER 12 IS ON THE BACK!!

Chapter 12 Questions: (BE THOROUGH IN YOUR ANSWERS, We will not take notes on this chapter in class!)
DUE A-DAY 2/27   B-DAY 2/28

1. How do minerals differ from timber when it comes to resource management?
2. Compare and contrast maximum sustainable yield, adaptive management, and ecosystem-based management.
3. Why might pursuing maximum sustainable yield sometimes conflict with what is ecologically desirable?
4. Name several major causes of deforestation.
5. Where is deforestation most severe today?
6. Compare and contrast the major methods of timber harvesting.
7. Describe several ecological effects of logging.
8. How has the U.S. Forest Service responded to public concern over the ecological effects of logging?
9. Are forest fires a bad thing? Explain your answer.
10. Approximately what percentage of Earth's land is used for agriculture?
11. What policies have caused conversion of wetlands for agriculture in the United States?
12. Name five reasons that people have created parks and reserves.
13. Why did the U.S. Congress determine in 1964 that wilderness areas were necessary?
14. How did these areas differ from national parks?
15. How did these areas differ from national wildlife refuges?
16. Why do some people in the United States oppose federal land protection?
17. Roughly what percentage of Earth's land is protected?
18. What types of protected areas have been established in countries outside of North America?
19. People in developed countries are fond of warning people in developing countries to stop destroying rainforest. People of developing countries often respond that this is hypocritical, because the developed nations became wealthy by deforesting their land and exploiting its resources in the past. What would you say to the president of a developing nation, such as Brazil, that is seeking to clear much of its forest?