**Chapter 1 Reading Q’s – Environmental Problems, Their Causes, and Sustainability**

**APES: *Living in the Environment***

1. Living in an Exponential Age: Life in the fast lane
   1. Give 2 examples of exponential growth.
   2. What is happening to the world population?
   3. How much of the world is classified as poor and desperately poor?
   4. Give 3 examples of other problems that are being caused by population growth.
2. Living More Sustainably
   1. What is Environmental Science?
      1. Describe figure 1.1. What are 3 consequences of the population growth illustrated in this figure?
      2. What is the goal of environmental science?
   2. Sustainability: The integrative Theme of this Book
      1. Define and provide examples of the 5 steps towards sustainability.
      2. Explain sustainability in your own words.
   3. Environmentally Sustainable Societies: Protecting Natural Capital and Living off Its Income
      1. How can a society live sustainably?
3. Population Growth, Economic Growth, and Economic Development
   1. Human Population Growth: Slowing but still rapid
      1. Compare the change in population growth rate from 1963 to 2006. How can you calculate the number of people added to the world each year?
   2. Economic Growth and Economic Development
      1. Define GDP and per capita GDP.
   3. Doubling Time and Exponential Growth: The Rule of 70
      1. What is the formula for the rule of 70 and what is it used for?
      2. Solve: China has a population of 1.3 billion people and a growth rate of 1.0%. How many years will it take for China’s population to double at this growth rate? What will be China’s population in 35 years if it continues to grow at this rate?
4. Resources
   1. What is a resource?
      1. What is a resource and give 3 ways in which we classify resources.
   2. Perpetual and Renewable resources
      1. Give 5 examples of renewable resources and how they are renewed.
   3. The Tragedy of the Commons
      1. Explain the tragedy of the commons in your own words.
      2. Give 4 examples of commons. For each commons, explain how humans have changed or impacted it. Provide one solution to reduce the tragedy of the commons for each of your examples.
   4. Our ecological footprint
      1. Explain an ecological footprint.
      2. What are 3 things that have the greatest environmental impacts?
   5. Nonrenewable Resources
      1. Explain nonrenewable resources and provide 5 examples.
      2. How can we extend the life of our nonrenewable resources?
5. Case Study: China and India: The New Affluent Consumers
   1. What is meant by an affluent consumer?
   2. Describe China’s economic growth and how it will impact the globe (or how it already has).
   3. What will China need in order to continue to grow its economy? How can China do this sustainably?
6. Pollution
   1. Sources and Harmful Effects of Pollutants
      1. List 3 types of effects of pollutants.
   2. Solutions: Preventions vs Cleanups
      1. Distinguish between pollution prevention and pollution cleanup.
      2. What are 3 problems with relying on cleanups alone?
7. Environmental Problems: Causes and Connections
   1. Key Environmental Problems and Their Basic Causes
      1. Identify at least 4 causes of environmental problems.
   2. Poverty and Environmental Problems
      1. What is poverty and how can it lead to environmental problems?
      2. How does poverty affect population growth?
      3. What are 4 factors that lead to 7 million premature deaths every year?
   3. Resource Consumption and Environmental Problems
      1. What is Affluenza?
   4. Beneficial Effects of Affluence on Environmental Quality
      1. List 3 environmental benefits and 3 environmental problems associated with affluence.
   5. Connections between Environmental Problems and Their Causes
      1. Identify 3 factors that dictate the environmental impact of a problem.
      2. What are key factors in developing countries?
      3. What are key factors in developed countries?
      4. How can technology be both environmentally harmful and environmentally beneficial?
8. Cultural Changes and the Environment
   1. Human Cultural Changes
      1. Identify and describe 3 major cultural changes that have had an impact on the environment.
      2. List 7 advantages and disadvantages of the industrial-medical revolution.
   2. Eras of Environmental History in the US
      1. Identify and describe the 4 eras of environmental history in the US.
9. Sustainability and Environmental Worldviews
   1. Are things getting Better or Worse? A millennium Assessment
      1. What is needed for our economy to continue growing?
      2. Identify three steps needed to take in order for the world to shift towards a sustainable economy and civilization.
   2. Environmental Worldviews and Ethics
      1. Answer the 5 questions on page 22. Based on your answers, identify if you have a planetary management worldview, a stewardship worldview, or an environmental wisdom worldview.
      2. Read the case study: Aldo Leopold’s Environmental Ethics. Based on your reading, what type of worldview does Leopold have?
   3. Four Scientific Principles of Sustainability: Copy Nature
      1. ID and describe 4 principles of sustainability.
      2. What does it mean when it says copy nature?
   4. Building Social Capital: Talking and Listening to One Another
      1. What is social capital?
      2. What are trade-off solutions?
   5. Case Study: Chattanooga, Tennessee
      1. Describe the problems in Chattanooga and how the citizens solved those problems with sustainable solutions.