**Chapter 14 – Reading Questions**

1. What is the difference between a point source and a nonpoint source of pollution?
2. What are the 3 main negative effects of contaminating water with human wastewater?

1. How does measuring the biochemical oxygen demand of a lake inform us about the potential presence of wastewater contamination?

1. Put the following statements describing the process of eutrophication in the correct order:

\_\_ Microbes digest the dead organisms, depleting O2 dissolved in the water

\_\_ Nutrients such as N & P are released

\_\_ Fish and other marine organisms die in large numbers

\_\_Large dead zones are created

\_\_ Wastewater enters a natural body of water

\_\_Rapid population blooms of algae & other producers occur, followed by mass die-offs

1. Identify 4 specific diseases or health threats which can come from human wastewater contamination.
2. Explain how a septic tank system works (you may draw a diagram)
3. Explain how a sewage treatment plant works (you may draw a diagram)
4. What are manure lagoons, and why do they pose major water-pollution concerns?
5. Complete the following chart for heavy metal pollutants found in water:

|  |  |  |
| --- | --- | --- |
| **Metal** | **How does it enter water supply?** | **Risks to human health?** |
| Lead |  |  |
| Arsenic |  |  |
| Mercury |  |  |

1. What are the primary causes of acid deposition in to water?
2. How does a coal scrubber work to reduce acid deposition?
3. What risks does acid deposition pose to ecosystems and/or humans?
4. Complete the following chart regarding synthetic organic compound pollution.

|  |  |  |
| --- | --- | --- |
| **Compound category** | **Source/cause/examples** | **Effects on humans and/or ecosystems** |
| Pesticides & inert ingredients |  |  |
| Pharmaceuticals & hormones |  |  |
| Military compounds |  |  |
| Industrial compounds |  |  |

1. What are the major causes of oil pollution in water bodies?
2. Describe the 3 major approaches to remediating oil spills.
3. What are the major components of solid waste pollution in water bodies, and how can it affect ecosystems?
4. What causes sediment pollution, and what negative effects does it have?
5. How can thermal pollution negatively affect an ecosystem?
6. What is the objective of the Clean Water Act, and why was it important?
7. The Safe Drinking Water Act established maximum contaminant levels for various substances. Explain what that means and why it is important in protecting water quality.
8. Generally speaking, what is the relationship between a country’s level of economic development and its legislation addressing water pollution? What do you think explains this relationship?

**Chapter 14 Vocabulary List**

|  |  |  |  |
| --- | --- | --- | --- |
| **Term** | **Description** | **Example** | **Illustration** |
| Point sources |  |  |  |
| Nonpoint sources |  |  |  |
| Wastewater |  |  |  |
| Biochemical oxygen demand |  |  |  |
| Dead zones |  |  |  |
| Eutrophication |  |  |  |
| Septic tank |  |  |  |
| Leach field |  |  |  |
| Primary treatment |  |  |  |
| Secondary treatment |  |  |  |
| Tertiary treatment |  |  |  |
| Disinfection (Chlorine/UV) |  |  |  |
| Manure lagoon |  |  |  |
| Acid mine drainage |  |  |  |