**Chapter 2: Systems and Matter**

**Vocabulary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. Matter | 9. Ionic Bond | 17. Chemical Reaction | 25. Energy | 33. Temperature |
| 2. Mass | 10. Hydrogen Bond | 18. Law of Conservation of Matter | 26. Joule | 34. 1st Law of Thermodynamics |
| 3. Molecule | 11. Polar Molecule | 19. Inorganic Molecule | 27. Power | 35. 2nd Law of Thermodynamics |
| 4. Compound | 12. Surface Tension | 20. Organic Molecule | 28. Electromagnetic Radiation | 36. Energy Efficiency |
| 5. Isotopes | 13. Capillary Action | 21. Carbohydrate | 29. Photon | 37. Energy Quality |
| 6. Radioactive Decay | 14. Acid | 22. Protein | 30. Potential Energy | 38. Entropy |
| 7. Half-life | 15. Base | 23. Nucleic Acid | 31. Chemical Energy | 39. Negative Feedback Loop |
| 8. Covalent Bonds | 16. pH | 24. Lipid | 32. Kinetic Energy | 40. Positive Feedback Loop |

**A Lake of Salt Water, Dust Storms and Endangered Species**

1. Where is Mono Lake and why is it unique?
2. What was the controversial plan made in 1913? What were the consequences of that plan?
3. Explain how the Mono Lake system changed due to the decline in freshwater.
4. What changed in 1994? What caused the change?
5. What does the story about Mono Lake illustrate about human interactions with complex natural systems.

**Module 4: Matter comprised atoms and molecules that move along different systems**

1. What is radioactive decay and why would be study it in environmental science? (see if you can come up with more than one reason).
2. What is the difference between an atom, a molecule, and compound?
3. What is a half life and why would we study it in environmental science?
4. How does carbon dating work?
5. Water has four important properties that help it support life on Earth. List the four properties and define any that you are not familiar with.
6. The pH scale is logarithmic. How much more basic is something with a pH of 10 than something with a pH of 7?

**Module 4 AP Review Questions**

1. 2. 3. 4. 5. 6.

**Module 5: Energy is a fundamental component of environmental systems**

1. What is energy? Name three types of energy.
2. Explain how energy can be converted from one form to another.
3. How does the amount of energy within an ecosystem determine they type of organisms that reside there?
4. For each situation below, state whether the 1st or 2nd law of thermodynamics applies:
5. In a car, only some of the energy from the gasoline is used to propel the car. The rest is lost as heat.
6. Nothing can ever be 100% efficient in terms of converting energy to work.
7. When you walk up a hill you gain the same amount of energy you will lost as you walk down.
8. Your computer, TV, and refrigerator all need a fan to keep from overheating.
9. There is no such thing a perpetual motion.
10. What is the difference between energy efficiency and energy quality?
11. What is the difference between an open and closed system? Give an example of each.
12. Label the following as a positive or negative feedback loop:
13. The baby boom resulted in lots of children therefore the US population grew. Those children grew up and had more babies making the population continue to grow. =
14. Cole takes a nap and gets a sticker when he gets up so the next day he takes a nap so that he will get another sticker. =
15. Air conditioner and thermostat =
16. Compounding interest. =
17. California state lottery increases so more people buy tickets.

=

**Module 5 AP Review Questions (pg 54)**

1. 2. 3. 4. 5. 6.

**Chapter 2 AP Environmental Science Practice Exam**

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

11. 12. 13. 14.