

Biology
Quiz #5 Study Guide

Name: _____

Date: _____ Hour: _____

1. What is the smallest particle that can be identified as a particular element? _____
2. What are aqueous solutions containing a high concentration of hydroxide ions (OH⁻) called? _____
3. Which is a substance that produces OH⁻ ions (hydroxide ions) when dissolved in water? _____
4. What are aqueous solutions containing a high concentration of hydrogen (H⁺) ions called? _____
5. What is the term for a mixture that can react with acids or bases to keep pH in a steady range?

6. Describe activation energy: _____

7. How does an enzyme influence a biological reaction? _____
8. When two substances are combined, heat is produced. Does this provide evidence that a chemical reaction took place? And explain why or why not:

9. Anything that has mass and takes up space is called: _____
10. The negative charged particle in an atom is the: _____
11. The positively charged particle in an atom is the: _____
12. The neutral particle in an atom is the: _____
13. When added to water, how does an acid affect the H⁺ concentration and pH? _____

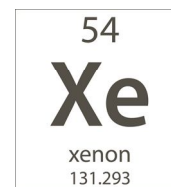
14. A chemical reaction is a process by which atoms or groups of atoms in substances are: _____

15. What is the pH of water? _____
16. Which bond is the result of water clinging to itself? _____

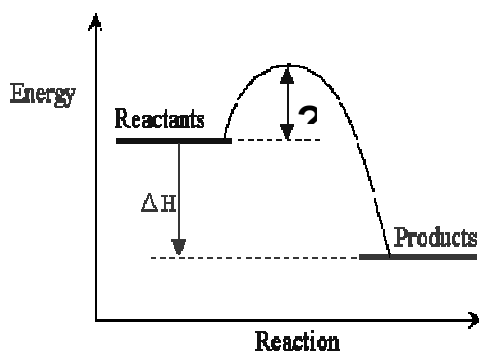
17. Which elements are found in all living creatures? _____
- _____
18. Which type of reaction releases energy, many times the reaction is in the form of heat?
- _____
19. Which type of reaction absorbs energy, many times the reaction feels cold? _____
20. Most biological processes occur at which pH level? _____
21. Human blood must maintain a pH of about 7.4. If a person cannot exhale (breathe out), the CO_2 dissolved in the watery portion of the blood can increase rapidly. Which characteristic of life will be immediately affected by this situation?
- _____
22. Water is considered a polar molecule because: _____
23. Define a solute: _____

Use the figure on the side to answer the questions 24-26.

24. Which number or letter represents the atomic number? _____
25. Which number or letter represents the atomic mass? _____
26. Which number or letter represents the chemical symbol? _____



Use the below figure to answer questions 27-30.



27. In the above diagram, is the energy being absorbed or released? _____
28. What general type of reaction is shown in this diagram? _____

29. What is represented by the arrow labeled with a question mark? _____

30. If you held a test tube containing this reaction as it took place, how would it feel when you touched it?

31. Are Hydrogen bonds strong? Explain your answer: _____

32. Define the following:

a) Catalyst _____

b) Solvent _____

c) Homogeneous mixture _____

d) Solute _____
