Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pd: \_\_\_\_\_ Ast: \_\_\_\_\_

**Acids, Bases, and Salts Study Guide**

1. What does pH measure?
2. Explain how the equation “2H2O 🡪 OH- + H3O+” is related to acids and bases.
3. Which ion do basic (alkaline) substances produce in solution (in water)?
4. Which ion do acidic substances produce in solution (in water)?
5. How can you use litmus paper and pH paper to determine if a substance is an acid?
6. How can you use litmus paper and pH paper to determine if a substance is basic?
7. How can you use litmus paper and pH paper to determine if a substance is neutral?
8. Describe the reactants and product(s) in a neutralization reaction.
9. What color is salt (any salt, not just table salt)?
10. How does salt taste (any salt, not just table salt)?
11. Explain why the reaction, “HCl + NaOH 🡪 NaCl + H2O” is considered a neutralization reaction.
12. If a substance tastes bitter and feels slippery, how would you most likely classify it (acid, base, or neutral)?
13. If a substance has a pH of 9 and turns red litmus paper blue, how would you classify it (acid, base, or neutral)?
14. If a substance has a pH of 3 and turns blue litmus paper red, how would you classify it (acid, base, or neutral)?
15. If I tell you a substance is neutral, what pH would you predict it would register with pH paper?

**Use the data in the table below to answer the following questions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Substance** | **Red Litmus** | **Blue Litmus** | **pH paper** |
| A |  |  | 2.5 |
| B | no change | no change |  |
| C |  |  | 8.5 |
| D | turned blue | no change |  |
| E | no change | no change | 7 |
| F | turned blue | no change | 13 |
| G | no change | turned red | 5 |

1. How would you classify substance E? What evidence do you have to support this claim?
2. How would you classify substance F? What evidence do you have to support this claim?
3. There is no data listed for the red or blue litmus paper for substance A. Make a prediction about how each type of paper would react if dipped into substance A. What evidence do you have to support this claim?
4. There is no pH value listed for substance B. Predict a value that you would expect to measure for the pH of this substance. What evidence do you have to support this claim?
5. There is no data listed for the red or blue litmus paper for substance C. Make a prediction about how each type of paper would react if dipped into substance C. What evidence do you have to support this claim?
6. How would you classify substance G? What evidence do you have to support this claim?
7. There is no pH value listed for substance D. Make a prediction about the pH value of this substance. What evidence do you have to support this claim?
8. Which substance(s) would you expect to react with metals and carbonates by producing hydrogen gas bubbles and causing corrosion? What evidence do you have to support this claim?
9. Which substance(s) would you expect to taste sour? What evidence do you have to support this claim?
10. Identify (a) the strongest acid, and (b) the weakest acid listed in the table above. Explain your reasoning.