Chemistry: **Acids and Bases**

*Directions:* Answer each of the following questions by reading Chapter 15 of *Modern Chemistry*. You need not use complete sentences.

1. What type of acid is in… sour milk? citrus fruits? apples? grape juice?

2. What is household ammonia used for?

3. Sodium hydroxide is commonly known as what?

4. Which two bases are commonly found in antacids?

5. What three acids are in many carbonated beverages?


7. What color does “pH paper” turn in acid solution?

8. What are the products of an acid-base neutralization reaction?

9. What two things does a binary acid contain?

10. What is the formula for hydrosulfuric acid?
11. What three things does an oxyacid contain?

12. What is the name of \( \text{H}_2\text{CO}_3 \)?

13. Which acid is the most commonly produced chemical in the world?

14. List three uses of sulfuric acid.

15. Why would nitric acid be of interest to the U.S. military?

16. What three elements are essential for plants and animals?

17. List three uses of phosphoric acid.

18. Why does the stomach produce hydrochloric acid?

19. What is meant by the process of “pickling”?

20. What is a dilute solution of hydrochloric acid often sold in hardware stores called?

21. What is the freezing point of glacial acetic acid?

22. What color does “ph paper” turn in basic solution?

23. List five properties of bases.

24. Define an Arrhenius acid.
25. Define an Arrhenius base.

26. What is the formula of the hydronium ion?

27. Write an equation for the dissociation of HClO₄.

28. Write an equation for the dissociation of CH₃COOH.

29. Define a strong acid.

30. List three strong acids.

31. Define a weak acid.

32. List three weak acids.

33. Organic acids all contain which group? (Give its name and formula.)

34. Are organic acids generally weak or strong?

35. How is an alkaline solution formed?

36. List four strong bases.

37. What does the alkalinity of aqueous solutions depend on?

38. Is household ammonia a weak or strong base?

39. Define a Bronsted-Lowry acid.
40. Define a Bronsted-Lowry base.

41. What happens in a Bronsted-Lowry acid-base neutralization reaction?

42. Define a monoprotic acid and give one example.

43. Define a polyprotic acid and give one example.

44. Define a diprotic acid and give one example.

45. Define a triprotic acid and give one example.

46. Put the following acids in order: HCl, H₂SO₄, H₂CO₃, HNO₃, HF, HClO₃, CH₃COOH

   WEAKEST ACID
   HCl, H₂SO₄, H₂CO₃, HNO₃, HF, HClO₃, CH₃COOH
   STRONGEST ACID

47. What does it mean if a chemical is amphoteric?

48. Write the formula for a chromium compound that is amphoteric.

49. What are two of the main components of baking powder?

50. Why is baking powder used as an ingredient in foods such as biscuits and bread?

51. Write the equation for the chemical reaction between hydrochloric acid and sodium hydroxide.

52. How does acid rain form?

53. Write the equation for sulfur trioxide reacting with water to form sulfuric acid.

54. Why are structures that contain marble damaged by acid rain?