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10. What does the pH scale measure?
11. List the value or range of values on the pH scale that corresponds to:
    (a) neutral solutions
    (b) acidic solutions
    (c) basic solutions
12. (a) How can you identify an acid from its chemical formula?
    (b) How can you identify a base from its chemical formula?
13. What kind of compound is formed along with water in an acid-base neutralization?
14. What do we call substances that change colour depending on the pH of the solution they are in?
15. What value for pH would you expect for each of the following?
    (a) bananas
    (b) ammonia (NH_3) window-cleaning solution
    (c) milk
16. What is the colour of bromothymol blue indicator in each of the following?
    (a) stomach acid
    (b) egg white
    (c) water
17. (a) If the pH of a solution drops from 5 to 4, has the acidity increased or decreased?
    (b) By how many times has the pH increased or decreased?
18. State the name and chemical formula of each of the following.
    (a) the acid present in your stomach
    (b) a base used as a drain cleaner
    (c) the acid used in automobile batteries
19. (a) When a metal oxide is dissolved in water, is the solution acidic or basic?
    (b) When non-metal oxide is dissolved in water, is the solution acidic or basic?
20. (a) Define organic compound.
    (b) Define inorganic compound.
21. (a) What is a hydrocarbon?
    (b) Give the name and common use of three different hydrocarbons.
22. What elements are present in all alcohols?
23. Classify each of the following compounds as organic or inorganic by examining its chemical formula.
    (a) $CH_3CH_2CH_2OH$
    (b) $Na_2C_2O_4$
    (c) Na_4C
    (d) CH_3COOH
    (e) $MgCO_3$
    (f) $AlCl_3$
    (g) CH_4
    (h) CO_2

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24. Identify the reaction type of each of the following chemical reactions.
    (a) $S_8 + 8O_2 \rightarrow 8SO_2$
    (b) $2Au + N_2 \rightarrow 2AuN$
    (c) $2HF \rightarrow H_2 + F_2$
    (d) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$
    (e) $H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$
    (f) $HI + CsOH \rightarrow CsI + H_2O$
    (g) $Fe(NO_3)_3 + 3KCl \rightarrow FeCl_3 + 3KNO_3$
25. Copy and then complete each equation.
    (a) $Ca + CuF_2 \rightarrow$
    (b) $Rb + O_2 \rightarrow$
    (c) $C_3H_7OH + O_2 \rightarrow$
    (d) $Cl_2 + PbI_4 \rightarrow$
    (e) $Li_2O \rightarrow$
    (f) $HF + Ca(OH)_2 \rightarrow$
    (g) $Ba_2 + Ni(NO_3)_2 \rightarrow$
    (h) $Al + I_2 \rightarrow$
    (i) $AgNO_3 + Na_2CrO_4 \rightarrow$
26. Which of the four factors affecting reaction rate is most important in each example below?
    (a) You place food in a refrigerator so it does not spoil.
    (b) You use extra laundry soap to help remove stains from clothes.
    (c) A person rescued from a burning house is given oxygen.
    (d) A baby's body produces an enzyme to help it digest milk more quickly.
    (e) You grind up a lump of sugar to help it dissolve faster.
    (f) An acetylene blowtorch has extra oxygen added to the mix to help cut through steel.