

1. The element that is combined with oxygen in water is _____.
2. The atomic number is based on the number of _____.
3. A negatively charged particle orbiting the nucleus of an atom is called a(n) _____.
4. An uncharged particle in the nucleus of an atom is a(n) _____.
5. A unit formed by the union of two or more atoms is a(n) _____.
6. A mixture in which the components separate unless shaken is a(n) _____.
7. A substance in which another substance is dissolved is called a(n) _____.
8. The universal solvent is _____.
9. A charged atom or group of atoms is called a(n) _____.
10. A bond formed by the sharing of electrons between elements is called a(n) _____ bond.
11. A negatively charged ion is a(n) _____.
12. Compounds that release ions in solution are called _____.
13. An acid is a substance that donates a(n) _____ ion to another substance.
14. The _____ of a solution is based on its concentration of the element hydrogen.
15. A substance with a pH of 8.5 is _____.

16. A substance with a pH 4.0 of is _____ acidic than a substance with a pH of 6.0.
17. A form of an element that differs in its atomic weight from other forms of that same element is a(n) _____.
18. The element that is the basis of organic chemistry is _____.
19. All proteins, but not sugars, contain the element _____.
20. A protein that catalyzes reactions is called a(n) _____.
21. The prefix *poly-* means _____.
22. An element found in table salt is
A) chlorine
B) hydrogen
C) iron
D) carbon
23. The element that makes up the greatest percentage by weight in the body is
A) nitrogen
B) potassium
C) oxygen
D) sodium
24. An element needed to build bones is
A) nitrogen
B) chlorine
C) iron
D) calcium

25. A subunit of an element is a(n)
- A) molecule
 - B) compound
 - C) mixture
 - D) atom
26. The positively charged particles in the atom nucleus are called
- A) electrons
 - B) protons
 - C) isotopes
 - D) neutrons
27. The atomic number of phosphorus is 15. How many protons does phosphorus have?
- A) 15
 - B) More information is required to answer this question.
 - C) 12
 - D) 10
28. The atomic number of sodium is 11. The sodium ion has a single positive charge (Na^+). How many electrons does the sodium ion have?
- A) 11
 - B) 12
 - C) More information is required to answer this question.
 - D) 10
29. A common isotope of sodium is called sodium-24, based on its atomic weight. The atomic weight can be calculated by adding the number of protons and the number of neutrons. The atomic number of sodium is 11. How many neutrons does sodium-24 have?
- A) 11
 - B) More information is required to answer this question.
 - C) 9
 - D) 13
30. Cobalt has 27 electrons. What is its atomic number?
- A) More information is required to answer this question.
 - B) 13
 - C) 27
 - D) 54

31. A combination of two or more substances that are not chemically bonded is a(n)
- A) atom
 - B) mixture
 - C) compound
 - D) molecule
32. A substance composed of two or more different elements participating in a chemical bond is a(n)
- A) solution
 - B) mixture
 - C) compound
 - D) atom
33. A substance that dissolves in another substance is a(n)
- A) solvent
 - B) mixture
 - C) solute
 - D) solution
34. Which of the following is a mixture?
- A) sodium hydroxide
 - B) sugar water
 - C) table salt
 - D) hydrochloric acid
35. A non-separating suspension can be described as
- A) inorganic
 - B) nuclear
 - C) covalent
 - D) colloidal
36. A mixture in which the components remain evenly distributed is a(n)
- A) compound
 - B) molecule
 - C) suspension
 - D) solution

37. A chemical bond formed by the sharing of electrons is described as a(n)
- A) coordinate bond
 - B) mixture
 - C) ionic bond
 - D) covalent bond
38. A graphic tracing of the electric current generated by the heart is called a(n)
- A) radiotracing
 - B) electroencephalogram
 - C) thallium stress test
 - D) electrocardiogram
39. A basic substance could have a pH of
- A) 6
 - B) 7
 - C) 12
 - D) 0
40. Which of the following is an organic compound?
- A) glycerol
 - B) zinc
 - C) water
 - D) salt
41. The chemical category that includes fats and cholesterol is
- A) carbohydrates
 - B) solutions
 - C) lipids
 - D) proteins
42. Proteins are complex molecules composed of
- A) glucose
 - B) water
 - C) amino acids
 - D) calcium

43. The simplest form of carbohydrate is
- A) monosaccharides
 - B) polysaccharides
 - C) unisaccharides
 - D) disaccharides
44. All enzymes are
- A) None of the answers are correct.
 - B) proteins
 - C) lipids
 - D) carbohydrates
45. A hydrophobic substance
- A) repels water
 - B) is a colloid
 - C) contains hydrogen bonds
 - D) mixes easily with water
46. A substance that has a name ending in *-ase* is most likely a(n)
- A) mixture
 - B) protein
 - C) lipid
 - D) carbohydrate
47. List, and briefly describe, two uses of radioisotopes.
48. List the three characteristics of organic compounds.
49. List and briefly describe the three types of carbohydrates and give an example of each.
50. Mr. L has difficulties digesting milk products due to a deficiency in the enzyme lactase. His doctor has provided him with a solution of lactase to consume every time he eats a dairy product. Mr. L decides he wants some hot chocolate. He boils his lactase with his milk to save time. His hot chocolate causes him a severe stomachache, so he calls his doctor to complain. Why did his lactase fail to work?

51. Using your knowledge of word parts, what would be a logical definition for the term *monosaccharidase*?

Answer Key

1. hydrogen
2. protons
3. electron
4. neutron
5. molecule
6. suspension
7. solvent
8. water
9. ion
10. covalent
11. anion
12. electrolytes
13. hydrogen
14. pH
15. basic or alkaline
16. more
17. isotope
18. carbon
19. nitrogen
20. enzyme
21. many
22. A
23. C
24. D
25. D
26. B
27. A
28. D
29. D
30. C
31. B
32. C
33. C
34. B
35. D
36. D
37. D
38. D
39. C
40. A
41. C
42. C
43. A
44. B

45. A
46. B
47. Radioisotopes are used for cancer (radiation) treatment. The radiation harms tumor cells to a greater extent than normal cells. Radioisotopes are also used for diagnosis. X-rays use radioisotopes. Also, radioisotopes can be taken into the body and used to diagnose tissue abnormalities.
48. Organic compounds (1) contain carbon, (2) form large, complex molecules, and (3) are found in living things.
49. Monosaccharides are simple sugars consisting of a single sugar residue. An example is glucose. Disaccharides consist of two simple sugars. An example is maltose. Polysaccharides consist of many simple sugars linked together. Examples are starch and glycogen.
50. Enzymes are proteins. They are often inactivated by extreme heat. When Mr. L boiled his lactase solution, he inactivated the enzyme.
51. *Mono* means one, *sacchar/o* means sugar, and *-ase* signifies an enzyme. A monosaccharidase would thus be an enzyme that acts on simple sugars (monosaccharides).