A picture containing text, clipart

Description automatically generatedThis work is copyrighted under the [cc.by 4.0 license](https://creativecommons.org/licenses/by/4.0/) and was created by M.F. Sega as part of the ALG grant 18.

CHAPTER 2 – CHEMISTRY OF LIFE

1. The percent of water in our cells is:
   1. 90%
   2. 100%
   3. 80%
   4. 75%
2. Which one of the following is a compound?
   1. O
   2. H
   3. O2
   4. Na
3. Which four chemical elements are most common in all organisms:
   1. C, N, O, H
   2. Fe, C, N, O
   3. Na, N, O, H
   4. H, O, Zn, C
4. Atoms are made of:
   1. Protons, neutrons, electrons
   2. Protons, neutrons, isotopes
   3. Neutrons, isotopes, electrons
   4. Protons, isotopes, electrons
5. Which subatomic particles are present in the nucleus of an atom:
   1. Protons
   2. Molecules
   3. Electrons
   4. Isotopes
6. Which subatomic particles are present on the shells?
   1. Protons
   2. Neutrons
   3. Electrons
   4. Isotopes
7. Which subatomic particle is positively charged?
   1. Protons
   2. Neutrons
   3. Electrons
   4. Isotopes
8. The mass number of an element is:
   1. The number of protons
   2. The number of protons and neutrons
   3. The number of protons and electrons
   4. The number of neutrons and electrons
9. The atomic number of an element is:
   1. The number of protons
   2. The number of protons and neutrons
   3. The number of protons and electrons
   4. The number of neutrons and electrons
10. An isotope is an atom with:
    1. A different number of protons
    2. A different atomic number
    3. A different mass number
    4. A different number of electrons
11. A chemical bond is the result of:
    1. Atoms trying to fill their valence shells
    2. Atoms losing electrons
    3. Atoms with full shells
    4. Atoms with more neutrons
12. A chemical bond made by equal sharing of electrons is called:
    1. Nonpolar covalent bond
    2. Polar covalent bond
    3. Ionic bond
    4. Hydrogen bond
13. Choose the correct statement about polar molecules:
    1. Donate electrons
    2. Do not have charges
    3. Water is an example
    4. Lipids are an example
14. Consider a cup of coffee; it mostly consists of water, coffee and sugar. Choose the correct statement about this solution:
    1. Water is the solute and sugar/coffee are the solvent
    2. Water is the solvent and sugar/coffee are the solutes
    3. Water, coffee, sugar are all solvents
    4. Water, coffee, sugar are all solutes
15. Water strides can walk on water without breaking the water surface due to which water property:
    1. Temperature control
    2. Cohesion
    3. Adhesion
    4. Best solvent
16. Choose the correct statement related to how the oceans’ water regulates the environment temperature:
    1. When climate warms up, more hydrogen bonds are broken
    2. When climate warms up, more hydrogen bonds are formed
    3. When climate cools down, water absorbs more heat
    4. When climate cools down, more hydrogen bonds are broken
17. Ice floats on water because:
    1. There are more hydrogen bonds
    2. It contains less water molecules
    3. It contains more water molecules
    4. It is denser than the water
18. A buffer is a substance that:
    1. Accepts H+ when acid is added to a solution
    2. Accepts H- when acid is added to a solution
    3. Donates H+ when acid is added to a solution
    4. Donates H- when acid is added to a solution
19. Which statement is correct about the pH value:
    1. The more OH-, the lower the pH value
    2. The more H+, the lower the pH value
    3. The less OH-, the higher the pH value
    4. The less H+, the lower the pH value
20. An acid is a compound that:
    1. Releases H+ in a solution and has a pH lower than 7
    2. Releases H+ in a solution and has a pH higher than 7
    3. Accepts H+ in a solution and has a pH lower than 7
    4. Accepts H+ in a solution and has a pH higher than 7
21. How many monosaccharides are in the structure of a disaccharide?
    1. One
    2. Two
    3. Three
    4. More than four
22. How many fatty acids are present in the structure of triglycerides?
    1. 1
    2. 2
    3. 3
    4. 4
23. Amino acids are found in the structure of:
    1. Lipids
    2. Carbohydrates
    3. Proteins
    4. Nucleic acids
24. In animals, the sugar used to store energy for later use is:
    1. Sucrose
    2. Starch
    3. Lactose
    4. Glycogen
25. Nitrogenous base is part of:
    1. Amino acids
    2. Monosaccharides
    3. Nucleotides
    4. Fatty acids
26. Fats solid at room temperatures are:
    1. Saturated
    2. Monounsaturated
    3. Polyunsaturated
    4. Cis- fats
27. Which molecule is a polysaccharide?
    1. Sucrose
    2. Lactose
    3. Starch
    4. Glucose
28. The macromolecules important for cell identity are:
    1. Proteins
    2. Nucleic acids
    3. Lipids
    4. Carbohydrates
29. Which statement about DNA is incorrect:
    1. Has two chains of amino acids
    2. Chains are antiparallel
    3. has a double helix shape
    4. hydrogen bonds connect the chains