

Biochemistry Review

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Part A: True & False

1. _____ An acid is a substance that releases *hydrogen ions* when dissolved in water.
2. _____ Carbon atoms can bond together in *straight chains, branched chains, or rings*.
3. _____ Large molecules containing carbon atoms are called *micromolecules*.
4. _____ Polymers are molecules made from repeating units of *identical* organic compounds.
5. _____ *Carbon* is a component of all biological substances.

Part B: Matching

- | | |
|---------------------------|---|
| 6. _____ organic compound | A. made of amino acids |
| 7. _____ carbohydrate | B. form ionic bonds |
| 8. _____ lipid | C. makes up fats, oils, and waxes |
| 9. _____ protein | D. monosaccharide building blocks |
| 10. _____ nucleic acid | E. stores coded genetic information |
| | F. molecule that is composed mainly of carbon |

Part C: Multiple Choice

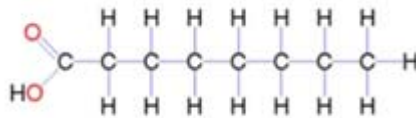
11. _____ Which is true in a covalent bond?
 - A. The bond forms between ions
 - B. The bond holds atoms weakly
 - C. The bond forms when electrons are shared
 - D. The bond is caused by van der Waals forces
12. _____ Which is involved in nearly every function in the human body?
 - A. carbohydrate
 - B. lipid
 - C. nucleotide
 - D. protein
13. _____ Which stores energy for future use by an organism?
 - A. carbohydrate
 - B. lipid
 - C. nucleotide
 - D. protein
14. _____ DNA and RNA are **similar** because they...
 - A. are polymers of nucleotides
 - B. have uracil
 - C. have ribose sugar
 - D. are double stranded
15. _____ What level of protein organization results in a beta-pleated sheet?
 - A. primary
 - B. secondary
 - C. tertiary
 - D. quaternary

Part D: Completion

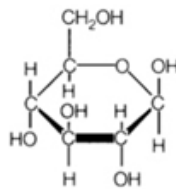
16. Positively charged particles in an atom are called _____
17. Hydrogen, oxygen, and carbon atoms in a glucose molecule are held together by _____ bonds
18. Because ammonia releases hydroxide ions, it is called a(n) _____
19. _____ is the process of breaking down polymers into monomers.
20. Amino acids differ by their _____ group.

Part E: Diagrams

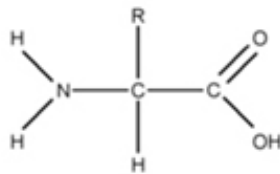
21. _____



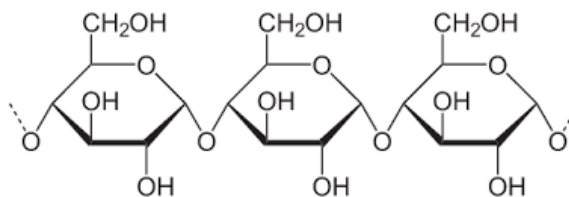
22. _____



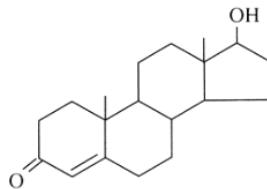
23. _____



24. _____



25. _____



Part F: Short Answer

26. Explain why water molecules are polar (2 marks)

27. Discuss the importance of buffers in biology. Use an example to clarify. (1 mark)

28. Explain why small amounts of fats are a necessary part of a healthy diet (2 marks)