Standards: D, K, G

Endorsement: Bio, Nat Sci

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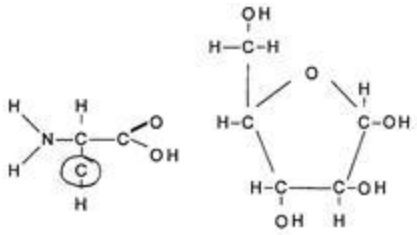
Bio111 FINAL **Write your answer choice on the correct line in the left margin of the page.**

1. The bonds that hold nitrogenous bases together (thus connecting the two strands of a DNA molecule) are
   a) electrostatic attractions between slight positive and slight negative charges
   b) individually quite strong
   c) bonds between ions
   d) produced by dehydration reactions

2. In an aqueous solution, hydration shells form around ions
   a) when the pH of the solution is neutral
   b) only if the ions are positively charged
   c) and cause them to precipitate
   d) because water is a polar molecule
   e) to keep the ions from being separated

3. The presence in blood of both carbonate, a weak acid, and bicarbonate ion, which is a weak base, is important because
   a) they move through the plasma membrane by facilitated diffusion
   b) together they help maintain stable blood pH
   c) each cancels out the harmful effects of the other
   d) they act as allosteric factors for blood enzymes

4. One of these structures has a carbon that is incorrectly bonded. Circle that carbon.



5. In a dehydration linkage
   a) water is added to one molecule and causes bonding to another molecule
   b) glycosidic linkages are replaced with hydrogen and oxygen
   c) a molecule of water is released when two hydroxyl groups combine to form an oxygen bridge
   d) water is added to two molecules as they combine

6. What do a cholesterol molecule and a molecule of phospholipid have in common?
   a) both are proteins
   b) both increase the fluidity of the plasma membrane
   c) both are lipids
   d) a and c
   e) all of the above

7. Proteins may become denatured when
   a) their hydrogen bonds are disrupted by a change in pH
   b) their hydrogen bonds are disrupted by extreme temperatures
   c) they unfold
   d) all of the above
   e) none of the above

8. **A + B + energy → AB** Which best describes the reaction between A and B?
   a) exergonic
   b) endergonic
   c) catabolic
   d) hydrolytic

9. A protein that serves as a catalyst is called
   a) a polymer
   b) a peptide
   c) an enzyme
   d) a substrate

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10. A catalyst is a molecule that
    a) makes a reaction happen, and is changed
    b) is used up during a reaction
    c) makes the reaction happen, but is not changed
    d) is formed by the reaction.

11. This holds cytosine and guanine together
    a) replication
    b) uracil
    c) transcription
    d) hydrogen bonding

12. This is **found in DNA**, but not in RNA
    a) ribose
    b) phosphate
    c) thymine
    d) ubiquitin

13. What are the nitrogenous bases found in RNA?
    a) adenine, guanine, thymine, cytosine
    b) uracil, guanine, cytosine, thymine
    c) guanine, uracil, thymine, adenine
    d) adenine, uracil, cytosine, guanine
    e) thymine, uracil, adenine, cytosine

1. A
2. D
3. B
4. —
5. C
6. C
7. D
8. B
9. C
10. C
11. D
12. C
13. D

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