

B 1.1 Carbohydrates MC

- What allows carbon to form a diverse range of organic compounds?**
 - It forms ionic bonds with metals
 - It has a full outer shell
 - It can form four covalent bonds
 - It dissolves easily in water
- Which of the following is *not* a form carbon compounds can take?**
 - Unbranched chains
 - Branched chains
 - Multiple rings
 - Metal lattices
- Which international convention is emphasized in scientific measurements?**
 - SI prefixes like kilo-, centi-, and milli-
 - Roman numerals
 - Fahrenheit temperature scale
 - British Imperial units
- What is the result of a condensation reaction?**
 - Polymers are broken down
 - Water is added to monomers
 - Monomers are linked, releasing water
 - Polymers dissolve in water
- Which of the following is NOT a macromolecule formed by condensation?**
 - Polysaccharides
 - Polypeptides
 - Nucleic acids
 - Steroids
- What is needed to break a polymer into monomers by hydrolysis?**
 - Heat
 - Water
 - Oxygen
 - Enzymes only
- Which sugar is commonly used to illustrate the properties of monosaccharides?**
 - Fructose
 - Ribose
 - Glucose
 - Galactose

8. Why are monosaccharides such as glucose suitable for transport in the body?

- A. They are insoluble
- B. They are large and complex
- C. They are chemically unstable
- D. They are soluble and yield energy efficiently

9. What makes polysaccharides like starch and glycogen compact?

- A. High water content
- B. Hydrogen bonding
- C. Branching and coiling
- D. Linear structure

10. Why are starch and glycogen relatively insoluble?

- A. They are too acidic
- B. Their molecular size is too large
- C. They have many hydroxyl groups
- D. They repel water

11. What structural feature gives cellulose its strength?

- A. Coiled structure of glucose units
- B. Branched chains of alpha-glucose
- C. Alternating beta-glucose monomers forming straight chains
- D. Double bonds in glucose

12. Which of the following is an example of glycoproteins used in cell recognition?

- A. Glucose transporters
- B. Phospholipids
- C. ABO antigens
- D. Enzymes

13. Which statement best describes lipids?

- A. They are highly soluble in water
- B. They are insoluble in non-polar solvents
- C. They dissolve in non-polar solvents
- D. They are ionic

14. Which molecules are formed when one glycerol links to three fatty acids?

- A. Phospholipids
- B. Triglycerides
- C. Steroids
- D. Polysaccharides

15. What feature allows steroids like oestradiol and testosterone to pass through cell membranes?

- A. Their size
- B. Their charge
- C. Their non-polar nature
- D. Their amphipathic structure

Answers

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