

## Module 3: Organic Molecules — Study Questions

1. What makes a molecule "organic"?
2. Why is carbon called the "backbone" of life?
3. What is a functional group? Give three examples.
4. What is the difference between a monomer and a polymer?
5. What is dehydration synthesis? What does it produce?
6. What is hydrolysis? What does it break down?
7. What are carbohydrates made of? What is their main function?
8. What is the difference between monosaccharides, disaccharides, and polysaccharides?
9. Give examples of storage polysaccharides (starch, glycogen) and structural polysaccharides (cellulose, chitin).
10. What are the main functions of lipids?
11. What is the difference between saturated and unsaturated fatty acids?
12. Why are trans fats considered unhealthy?
13. What are amino acids? How many are there?
14. What type of bond links amino acids together?
15. Describe the four levels of protein structure (primary, secondary, tertiary, quaternary).
16. What is denaturation? What causes it?
17. What are nucleic acids? What are the two types?
18. What are the components of a nucleotide?

19. Why can humans digest starch but not cellulose?

20. Why is ATP called the "energy currency" of the cell?