

Create 15 comprehension questions on metabolism in humans and provide the answers.

1. What is metabolism?

Answer: Metabolism is the set of life-sustaining chemical reactions in a living organism.

2. What are the two types of metabolism?

Answer: The two types of metabolism are anabolic and catabolic.

3. What is the purpose of metabolism?

Answer: The purpose of metabolism is to convert consumed energy into energy that can be used by our cells, tissues and organs.

4. What are catabolic reactions?

Answer: Catabolic reactions are metabolic pathways that break down complex molecules into simpler ones in order to generate energy.

5. What is the source of energy for metabolism?

Answer: The source of energy for metabolism is food in the form of glucose, fatty acids, and amino acids.

6. What are anabolic reactions?

Answer: Anabolic reactions are metabolic pathways that build complex molecules from simpler ones, usually in order to store energy.

7. What is the result of metabolism?

Answer: The result of metabolism is growth and repair of the body, movement, and other physical and chemical processes.

8. How does metabolism help us?

Answer: Metabolism helps us by converting consumed energy into energy that can be used by our cells, tissues and organs, allowing us to survive and thrive.

9. What are the three main categories of metabolic reactions?

Answer: The three main categories of metabolic reactions are catabolic reactions (breakdown of molecules for energy), anabolic reactions (building of complex molecules from simpler ones), and reactions that involve energy transfer and storage.

10. How does the body regulate metabolism?

Answer: The body regulates metabolism by hormones, enzymes, and other molecules that act as signaling and controlling agents.

11. What is the role of enzymes in metabolism?

Answer: Enzymes are key players in metabolism, as they catalyze metabolic reactions and regulate the speed and direction of metabolic pathways.

12. What is the metabolic rate?

Answer: The metabolic rate is a measure of the amount of energy a person or organism is using in a given amount of time.

13. What are calories and how are they related to metabolism?

Answer: Calories are units of energy, and they measure the energy in food. Metabolism converts this energy (calories) from food into energy the body can use.

14. What role does temperature play in metabolism?

Answer: Temperature plays an important role in metabolism, as most metabolic reactions only happen within a narrow range of temperatures.

15. How do nutrients affect metabolism?

Answer: Nutrients are essential for metabolism, as they are the fuel that drives the metabolic reactions. Nutrients provide energy in the form of calories, as well as other components, such as amino acids and fatty acids, that are needed for metabolic pathways.