

Nutrients and New Molecule Production

Biology · Answer Key · 20 Questions

1. What is the primary role of nutrients for the organism?

A) To provide energy and ensure assimilation

- B) To directly build new cells
- C) To export hormones and enzymes
- D) To facilitate the storage of lipids

2. What is assimilation in the context of cells?

A) The construction of their own molecules

- B) The absorption of nutrients from the bloodstream
- C) The production of energy through metabolism
- D) The export of synthesized products

3. Where does the synthesis of proteins primarily take place?

A) In the nucleus

- B) In the cell membrane
- C) In the cytoplasm
- D) Within the mitochondria

4. What are proteins assembled from?

A) Amino acids

- B) Lipids
- C) Carbohydrates
- D) Nucleic acids

5. In the experiment with the adult rat, what was used to mark the amino acids?

A) A radioactive atom of carbon

- B) A fluorescent molecule
- C) An isotope of nitrogen
- D) A stable isotope of oxygen

6. After several consecutive days of feeding, where were the labeled amino acids found in the rat?

A) In all cells of the organism

- B) Only in the digestive system
- C) Exclusively in the liver cells
- D) Primarily in the bone marrow

7. The graph shows the evolution of radioactivity in the liver proteins. What does this indicate about the incorporation of amino acids?

- A) It's a continuous process over time**
- B) It happens instantaneously
- C) It occurs only at the beginning
- D) It decreases rapidly after a short period

8. What does the renewal of cells and molecules necessitate?

- A) The production of new molecules**
- B) A constant supply of energy
- C) The breakdown of existing structures
- D) The elimination of waste products

9. The diagram illustrates that nutrients are absorbed from the intestinal wall into the bloodstream. What is the next step for these nutrients?

- A) Assimilation into new molecules**
- B) Direct export from the body
- C) Immediate release of energy
- D) Storage as lipids

10. What are some examples of new molecules produced by cells?

- A) Lipids, proteins, enzymes, hormones**
- B) Water, carbon dioxide, and oxygen
- C) Vitamins, minerals, and fiber
- D) Simple sugars and fatty acids

11. The term 'assimilation' implies the use of nutrients for what purpose?

- A) Building new molecular structures**
- B) Generating immediate energy
- C) Facilitating nutrient absorption
- D) Storing excess energy

12. According to the text, the nature of proteins depends on the order of what?

- A) Amino acids**
- B) Nucleotides
- C) Fatty acids
- D) Glycerol

13. What does the graph indicate about the liver cells' protein radioactivity over time?

A) It increases and then stabilizes

- B) It decreases steadily
- C) It remains constant
- D) It fluctuates randomly

14. The diagram shows 'Mise en réserve' which translates to:

A) Storage

- B) Absorption
- C) Assimilation
- D) Export

15. What is the source of energy provided by nutrients?

A) The organism itself

- B) The external environment
- C) The breakdown of existing molecules
- D) The synthesis of new molecules

16. The process described in Activity 2 focuses on the transformation of nutrients into what?

A) New molecules

- B) Waste products
- C) Heat energy
- D) Simple compounds

17. The diagram shows nutrients being absorbed from the intestinal wall. What is the physical barrier involved?

A) The intestinal wall

- B) The cell membrane
- C) The blood vessel wall
- D) The skin

18. What are hormones and other exported products synthesized from?

A) Nutrients

- B) Energy
- C) Storage molecules
- D) Waste materials

19. The experiment suggests that the body's cells are constantly rebuilding themselves using components derived from:

A) Dietary nutrients

B) Stored energy reserves

C) Environmental elements

D) Internal waste

20. The term 'sque' in the context of proteins likely refers to:

A) Skeletal structure

B) Sequence

C) Solubility

D) Size