

### C 1.1 Enzymes (SL) MC

1. **What is the main role of enzymes in cells?**
  - A. To transport molecules
  - B. To store energy
  - C. To act as catalysts and speed up reactions
  - D. To maintain cell shape
2. **How do enzymes affect the activation energy of a chemical reaction?**
  - A. They increase it
  - B. They eliminate it entirely
  - C. They reduce it
  - D. They store it for later use
3. **What term describes all the chemical reactions occurring within a living organism?**
  - A. Respiration
  - B. Digestion
  - C. Metabolism
  - D. Photosynthesis
4. **Why do organisms need many different enzymes?**
  - A. Because enzymes only work once
  - B. Because enzymes are non-specific
  - C. Because each enzyme is specific to one or a few reactions
  - D. Because enzymes are only active at high temperatures
5. **Which of the following is an example of an anabolic reaction?**
  - A. Digestion of starch
  - B. Oxidation of glucose
  - C. Hydrolysis of proteins
  - D. Synthesis of glycogen
6. **Which of the following is an example of a catabolic reaction?**
  - A. DNA replication
  - B. Protein synthesis
  - C. Hydrolysis of macromolecules
  - D. Photosynthesis
7. **What structural feature of enzymes allows them to catalyze reactions?**
  - A. Linear chains of nucleotides
  - B. Their rigid and inflexible shape
  - C. Their globular structure with an active site
  - D. Their ability to bind permanently with substrates

**8. Where does catalysis occur in an enzyme?**

- A. At the substrate's terminal group
- B. In the hydrophobic core
- C. At the active site
- D. In the peptide bonds

**9. What is meant by the "induced fit" model of enzyme action?**

- A. The enzyme breaks apart before binding the substrate
- B. The substrate permanently alters the enzyme's structure
- C. The enzyme and substrate change shape slightly upon binding
- D. The enzyme fits perfectly into any molecule

**10. Why is molecular movement important in enzyme catalysis?**

- A. It allows energy to be stored
- B. It helps substrates break apart
- C. It increases the chance of collisions between substrate and active site
- D. It makes enzymes denature

**11. What happens if an enzyme becomes denatured?**

- A. It becomes more efficient
- B. Its active site changes shape and loses function
- C. It gains new functions
- D. It permanently binds to substrates

**12. What can cause an enzyme to become denatured?**

- A. Too much substrate
- B. Optimal pH
- C. High temperature or extreme pH
- D. Low substrate concentration

**13. How does substrate concentration affect enzyme activity?**

- A. It always decreases activity
- B. It has no effect
- C. It increases activity until enzymes become saturated
- D. It denatures the enzyme

**14. How are enzyme-catalyzed reactions commonly measured?**

- A. By mass of enzyme added
- B. By the number of hydrogen bonds formed
- C. By the rate at which product is formed or substrate is used
- D. By visual colour change only

**15. What kind of biological model can a sketch graph of enzyme activity represent?**

- A. A structural model
- B. A functional model of gene expression
- C. A model of population growth
- D. A simplified representation of variable relationships

## Answers

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