

1. Enzymes are classified as which of the following biological organic compounds?

- A carbohydrates
- B lipids
- C nucleic acids
- D proteins

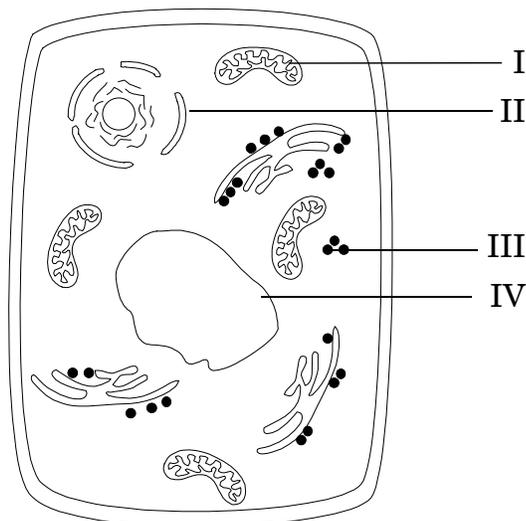
2. Some organelles have their own DNA that is distinct from the cell's nuclear DNA. This is true of which organelle?

- A cell wall
- B mitochondrion
- C plasma membrane
- D vacuole

3. Pollen in plants is **most similar** to which type of cell in humans?

- A egg
- B embryo
- C sperm
- D zygote

4. Protein synthesis occurs at which of the structures shown below?

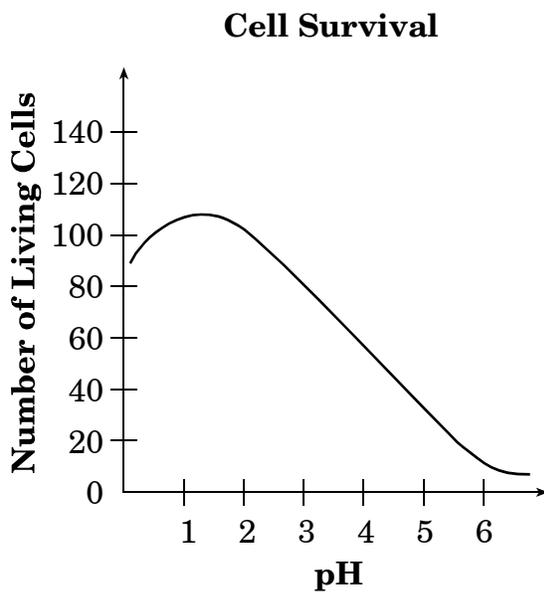


- A I
- B II
- C III
- D IV

5. Why do cells need buffering agents?

- A to maintain constant internal environment at a pH of 10
- B to minimize the changes in pH of the internal environment
- C to function properly in an extremely basic internal environment
- D to function properly in an extremely acid internal environment

6. Consider this graph:



Which statement **best** summarizes the information in the graph?

- A The cells survive best under acidic conditions.
- B The cells survive best under basic conditions.
- C These cells would survive better in distilled water.
- D The survival of these cells does not affect pH.

7. Placing wilted lettuce in cold water will make it crisp again. Which statement **best** describes what happens to restore the lettuce to its original condition?
- A Water left the lettuce cells by diffusion.
  - B Water entered the cells of the lettuce by osmosis.
  - C Osmosis caused salts to enter the lettuce cells.
  - D Salts in the leaf caused water to leave the cells.
8. Which cell process will move substances against a concentration gradient?
- A diffusion
  - B facilitated diffusion
  - C osmosis
  - D active transport
9. Individuals who lack lactase are unable to break down the sugar lactose. Which term **best** describes lactase?
- A enzyme
  - B fatty acid
  - C lipid
  - D starch

10. The bacteria that cause tetanus can survive in a puncture wound that has healed on the outer surface of the skin. Through what process do these bacteria acquire the energy they need to survive?
- A aerobic respiration
  - B anaerobic respiration
  - C chemosynthesis
  - D photosynthesis
11. In terms of ATP production, which process results in the **most** stored energy?
- A aerobic respiration
  - B anaerobic respiration
  - C fermentation
  - D photosynthesis
12. Which statement **best** distinguishes aerobic from anaerobic respiration?
- A Only aerobic respiration involves fermentation.
  - B Only anaerobic respiration occurs in the mitochondria.
  - C Only aerobic respiration requires oxygen.
  - D Only anaerobic respiration produces carbon dioxide.
13. Which **most accurately** describes the difference in ATP production between aerobic respiration and anaerobic respiration?
- A Aerobic respiration produces more ATP than anaerobic respiration.
  - B Anaerobic respiration produces more ATP than aerobic respiration.
  - C Only anaerobic respiration produces measurable amounts of ATP.
  - D Anaerobic and aerobic respiration produce the same amount of ATP.

### End of Goal 2 Sample Items

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- 13**      **Objective:**      **2.05**  
Investigate and analyze the bioenergetic reactions:  
a. Aerobic Respiration.  
b. Anaerobic Respiration.  
c. Photosynthesis.  
d. Compare and contrast photosynthesis and respiration.  
**Thinking Skill:**      Analyzing      **Correct Answer:**      A