

Chapter 10

Put line under your answer! There is only one correct answer in the multiple choice questions

1. In glycolysis

- a) glucose is broken down into simpler compounds
- b) chlorophyll helps store energy in NADPH, H⁺ molecules
- c) water is split into hydrogen ions and oxygen through the energy of light
- d) the Krebs cycle producing oxygen
- e) ATP molecules are converted to fats

2. The Krebs cycle

- a) may occur in cells where photosynthesis is also taking place
- b) takes place as a part of the dark reactions of photosynthesis
- c) consists of a breakdown of glucose to a simpler compound
- d) is the final step of the respiration process
- e) takes place primarily in the endoplasmic reticulum

3. Which of the following is / are not produced during fermentation?

- a) lactic acid
- b) ethyl alcohol
- c) CO₂
- d) calcium ions
- e) ATP

4. The complete respiration of 1 molecule of glucose produced a net gain of how many ATP molecules?

- a) 46
- b) 36
- c) 38
- d) 32
- e) 28

5. Photooxidation primarily involves the

- a) conversion of oxygen to ozone by light
- b) conversion of light to oxygen
- c) destruction of chlorophyll by light
- d) respiration of sugar
- e) conducting of food from sinks to sources

6. A step in respiration during which sugar fragments are oxidized is called

- a) phosphorylation
 - b) sugar cleavage
 - c) pyruvic acid formation
 - d) coenzymation
 - e) electron transport
7. **During glycolysis**
- a) a 2-carbon acetyl fragment is bounded to coenzyme A
 - b) 2 NADH,H⁺ molecules are produced from each glucose molecule
 - c) acetyl CoA is combined with oxaloacetic acid
 - d) 2 molecules of FADH₂ are produced
 - e) 5-carbon compound are produced
8. **The theory that oxidative phosphorylation is energized by a gradient of protons that flow across the inner membrane of a mitochondrion is called**
- a) chemiosmosis
 - b) assimilation
 - c) fluorescence
 - d) Phosphorescence
 - e) degradation
9. **During digestion links of chains of simple sugars are broken by a process of**
- a) hydrolysis
 - b) Phosphorescence
 - c) chemiosmosis
 - d) fermentation
 - e) carboxylation

Put (True) or (False) with each following sentences.

- 10. ADP molecules can become ATP molecules if a phosphate group is added to them ().
- 11. Respiration occurs only in cells where no photosynthesis is taking place ().
- 12. The energy released from a glucose molecule during fermentation is only a fraction of the energy released during aerobic respiration ().
- 13. Pyruvic acid is not produced during a fermentation process ().

14. Heat inactivates most enzymes ().
15. A temperature rise of 10°C can double or even triple respiration rates ().
16. Cytochromes are the principal acceptor molecules in an electron transport chain ().
17. Digestion nearly always involves hydrolysis ().

Matching: Write in middle column the number for the best answer.

1. During glycolysis	2	during oxidative phosphorylation.
2. ATP synthesis	1	gained two molecules of each NADH and ATP.
3. Respiration	6	occurs in the cytoplasm, requires no molecular oxygen.
4. Aerobic respiration	5	do not require oxygen gas, and much less energy is released.
5. Anaerobic respiration	4	stored energy release requires oxygen; CO ₂ and water are by-products of the process.
6. Glycolysis	3	is a catabolic process that takes place in the cytoplasm and mitochondria of cells.
7. Chemiosmosis	12	produced one ATP, three NADH, and one FADH ₂ in one complete cycle.
8. Assimilation	11	anaerobic respiration
9. cytochromes	10	acetyl CoA combines with 4-carbon oxaloacetic acid, producing first a 6-carbon compound.
10. In the citric acid cycle	9	the electron carriers in the transport system are.
11. Fermentation	8	conversion of sugar produced by photosynthesis to fats, proteins, complex carbohydrates, and other substances.
12. Citric acid cycle	7	move electrons in the electron transport system.