

1. Without oxygen, cells must rely on glycolysis to make ATP. Every glucose molecule results in _____ molecules of ATP.

- (A) 2
- (B) 6
- (C) 16
- (D) 32

2. Without oxygen, cells must increase the rate of glycolysis if they are to make enough ATP for the cell's needs. This is difficult because _____.

- (A) not enough glucose can get into the cell to supply glycolysis
- (B) there are not enough glycolytic enzymes in the cell's cytoplasm to sufficient ATP
- (C) lactic acid accumulates and shuts down glycolysis
- (D) with no oxidative phosphorylation, NAD⁺ is not replenished**

3. Muscle cells must rely on glycolysis for its ATP during periods of _____.

- (A) low carbohydrate diet
- (B) heavy exercise**
- (C) scuba diving at great depths
- (D) high carbon dioxide levels in the air

4. Under anerobic (no oxygen) conditions, cells must get rid of pyruvate accumulating in the cytoplasm from ongoing glycolysis. Muscle cells do this by making pyruvate into _____.

- (A) lactic acid**
- (B) lactic acid and propionic acid
- (C) ethyl alcohol
- (D) fatty acids

5. In bacteria and yeast, the process of converting pyruvate to ethyl alcohol, lactic acid, and other acids is called _____.

- (A) fermentation**
- (B) glycolytic conversion
- (C) anerobic oxidation
- (D) cytoplasmic oxidation

6. One unusual feature of yeast cells is that _____.

- (A) yeast cells have no mitochondria
- (B) yeast cells convert pyruvate into ethyl alcohol even during aerobic conditions**
- (C) in yeast cells, high pyruvate levels inhibit mitochondria
- (D) yeast cells require ethyl alcohol to move pyruvate into mitochondria

7. The main reason for vinegar's sour taste is acetic acid. Vinegar results when bacteria convert _____ to acetic acid.

- (A) glucose
- (B) pyruvate
- (C) lactic acid
- (D) ethyl alcohol**

10. Marine mammals are able to stay underwater because their muscles contain a lot of _____.

- (A) mitochondria
- (B) myoglobin**
- (C) white meat
- (D) lactic acid storage sites

8. Certain bacteria convert pyruvate to lactic acid. Lactic acid, like most acids, is sour tasting, so these bacteria are useful in the production of the following sour or slightly sour foods: cheese, yogurt, sour milk, sour cream, sourdough bread, and pickles. To prevent these bacteria from contaminating other foods with lactic acid, foods and liquids are heated to kill the lactic acid producing bacteria. This process is called _____.

- (A) lactobacillus decontamination
- (B) heat induction
- (C) pasteurization**
- (D) bacterial dessication

9. The dark meat of chicken uses fat as a source of acetyl coenzyme A to feed the Krebs cycle. The white meat uses glycolysis to supply the Krebs cycle with acetyl coenzyme A. Which statement is not true?

- (A) Dark meat is used for prolonged muscular effort.
- (B) White meat is used for both prolonged and short-lived muscular activity.**
- (C) Dark meat is greasy.
- (D) White meat is white because it has no myoglobin to bind oxygen.