

Practice Questions Relevant to Lecture 18 for Exam 2
Answer key on last page

Lecture 18 – Metabolic Concepts

1. True or False: Substrate-level phosphorylation only occurs in anaerobic tissues such as red blood cells.
2. List the three major forms in which energy is stored
3. Why can creatine phosphate readily transfer its phosphate to ADP to form ATP?
4. The primary source of glucose in the postabsorptive state is:
 - A. dietary starch.
 - B. liver glycogen.
 - C. conversion of alanine to glucose.
 - D. muscle glycogen.
 - E. liver gluconeogenesis.
5. What characteristic of a reaction in a cell is affected by the mass action effect?
6. An individual who has not consumed food in 72 hours is in which nutritional state?
7. The value for the physiological free energy (ΔG) is made more negative by:
8. The mobilization of protein will release which fuel to the circulation?

ANSWER KEY

Lecture 18 – Metabolic Concepts

1. **False:** Substrate-level phosphorylation only occurs in anaerobic tissues such as red blood cells.

2. List the three major forms in which energy is stored

Protein

Glycogen

Triacylglycerol

3. Why can creatine phosphate readily transfer its phosphate to ADP to form ATP?

CrP has a higher energy phosphate bond than the terminal phosphate bond in ATP.

4. The primary source of glucose in the postabsorptive state is:

- A. dietary starch.
- B. liver glycogen.**
- C. conversion of alanine to glucose.
- D. muscle glycogen.
- E. liver gluconeogenesis.

5. What characteristic of a reaction in a cell is affected by the mass action effect?

the physiological free energy ΔG

6. An individual who has not consumed food in 72 hours is in which nutritional state?

Starvation or early gluconeogenic phase

7. The value for the physiological free energy (ΔG) is made more negative by:

decreasing the ratio of products to reactants by decreasing the concentration of the products and/or by increasing the concentration of the reactants

8. The mobilization of protein will release which fuel to the circulation?

Amino acids