PU04 Pacing Quiz November 29, 1999
Carbohydrate Metabolism

Code Name: _____ **Score:** _____

Please provide answers to the following 10 questions.

1. Which one monosaccharide is a component of ATP, FAD, NAD, and RNA?

   ribose or ribose-5-phosphate (Lecture #1, PU03, D Fig 6.14)

2. Which is the major nondigestible carbohydrate in a typical human's diet?

   cellulose or lignin (Lecture #1, D Tab 27.1)

3. Which one molecule serves as a "crossroads" intermediate for the glycolytic, gluconeogenic, glycogenic, glycogenolytic, and pentose phosphate pathways?

   glucose-6-phosphate (Lectures 2-4, D Figs 7.4, 7.13)

4. Red blood cells lack which organelle important for oxidative phosphorylation?

   mitochondrion (Lectures 2-4, Fig 7.4, ECN O/H, SG p. 15)

5. Which molecule, formed by the action of lactate dehydrogenase, allows glycolysis to continue in the absence of oxygen?

   NAD^+ (Lectures 2-3, D Fig 7.13, SG p. 21)

6. The ATP required for glucose synthesis from lactate come largely from

   fatty acid oxidation (Lecture 3)

7. Which hormone would promote activation of phosphoprotein phosphatase?

   insulin (Lecture 3-4, D Figs 7.27, 7.57, 7.58)

8. Familial galactosemia is dangerous because

   of toxic build-up of galactitol (dulcitol) or galactose-1-phosphate (D CC 8.3, SG p. 63)

9. Glycogen phosphorylase catalyzes the release of which six-carbon molecule?

   glucose-1-phosphate (Lecture 4, D Figs 7.52, 7.53, SG p. 28)

10. Which pathway can be used to completely oxidize glucose-6-phosphate to CO_2 without the use of molecular oxygen?

    pentose phosphate pathway (Lecture 5, D Fig 8.3, SG p. 60)