**Combination of questions for 4. Week of lecture**

**Combination 1.**

**1.** Name all carbohydrates (mono, di, and polysaccharides) and state their building blocks.

2. Explain the regulation of PFK1 with fructose-2,6-bisphosphate**.**

**Combination 2.**

**1.** Explain the digestion of starch in the mouth.

2. What happens with pyruvate under anaerobic condition

**Combination 3.**

**1.** Explain carbohydrate digestion in the small intestine.

2. Name all enzymes and coenzymes of the PDH complex.

**Combination 4.**

**1.** Explain carbohydrate digestion in the large intestine.

2. State the main characteristics of HMP shunt.

**Combination 5.**

**1.** State the highlights of glycolysis. (Name the entering molecule, state the location of the process and final products).

2. Explain how the pentose phosphate pathway and glutathione peroxidase protect erythrocytes against hemolysis.

**Combination 6.**

**1.** Name all regulatory enzymes of glycolysis and HMP shunt.

2. What happens with pyruvate under aerobic conditions?

**Combination 7.**

**1.** What is the primary function of the HMP shunt?

2. Explain the translocation of pyruvate from cytosol to mitochondria.

**Combination 8.**

1. Explain the mechanism of oxidative decarboxylation of pyruvate by PDH
2. Explain the reaction catalyzed by phosphoglycerate kinase and its importance in body

**Combination 9.**

1. Explain the reactions of glycolysis where NADH+H+ is generated and its importance
2. What is an irreversible (oxidative ) phase of HMP and why is important?