**QUIZ Ⅲ**

**Biochemistry Ⅱ December 12, 2014**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_ ID(学号):\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ⅰ. Multiple choice questions (选择题):**

1. What is the rate-limiting step in fatty acid synthesis?
2. the condensation step of fatty acid synthase
3. cleavage of the fatty acid from the acyl carrier protein (ACP)
4. attachment of a malonyl group to the acyl carrier protein (ACP)
5. the formation of malonyl-CoA

**Answer\_\_\_\_\_D\_\_\_\_\_\_\_\_**

1. Which one of the following contributes nitrogen to both purine and pyrimidine rings?
2. Glutamate B. Carbamoyl phosphate C. Glycine
3. Tetrahydrofolate E. Aspartate

**Answer \_\_\_\_\_\_E\_\_\_\_\_\_\_**

1. Glutamate is derived from which glycolysis or citric acid cycle intermediate?
2. pyruvate B. α-ketoglutarate C. oxaloacetate D. 3-phosphoglycerate

**Answer\_\_\_\_\_\_\_\_B\_\_\_\_\_**

1. Which compound links glycolysis, nucleotides synthesis or citric acid cycle intermediate?
2. acetyl-CoA B. glucose 6-phosphate C. citrate
3. oxaloacetate E. glycerol 3-phosphate

**Answer\_\_\_\_\_\_\_B\_\_\_\_\_\_**

1. What are the roles of citrate in intermediary metabolism? ***(With more than one correct answers)***
2. activates PFK-1(inhibit) B. activates acetyl-CoA carboxylase
3. shuttles acetyl-CoA out of mitochondria to the cytosol
4. shuttles acetyl-CoA from cytosol to mitochondria
5. is a key intermediatre of the TCA cycle F. activates citrate synthase

**Answer\_\_\_\_\_\_BCE\_\_\_\_\_\_\_**

**Ⅱ. Short-answer questions （简答题）:**

1. skeletal muscle does not contribute glucose to the blood and other tissues. Explain why.

Glucose 6-phosphatase

1. What reaction is catalyzed by ribonucleotide reductase?

NDP to dNDP

Answer for QUIZ Ⅲ(December 12, 2014):

Ⅰ. Multiple choice questions (选择题):

1. D
2. E
3. B
4. B
5. BCE

Ⅱ. Short-answer questions （简答题）:

1. Skeletal muscles do not have glucose 6-phosphotase.
2. NDP🡪dNDP

**QUIZ Ⅲ**

**Biochemistry Ⅱ December 11, 2014**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_ ID(学号):\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ⅰ. Multiple choice questions (选择题):**

1. Which of the following are the primary substrates for gluconeogenesis?
2. Galactose and fructose B. Sucrose and lactose
3. Acetyl-CoA and succinyl-CoA D. Glycerol and alanine

**Answer\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. A coenzyme required by some enzymes that transfer one-carbon groups is
2. thiamine pyrophosphate B. flavin adenine dinucleotide

C. nicotinamide adenine dinucleotide D. pyridoxal phosphate

E. tetrahydrofolate

**Answer\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Aspartate is derived from which glycolysis or citric acid cycle intermediate?
2. α-ketoglutarate B. oxaloacetate C. pyruvate D. 3-phosphoglycerate

**Answer\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Which of the following cellular activities is decreased following exposure to physiological concentrations of insulin?
2. Plasma membrane transfer of glucose B. Glucose oxidation
3. Lipogenesis D. Gluconeogenesis

**Answer\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Which of the following enzymes are involved in the gluconeogenesis conversion of pyruvate to glucose?***(With more than one correct answers)***
2. pyruvate carboxylase B. pyruvate kinase
3. fructose 2,6-bisphosphatase D. glucose 6-phosphatase
4. phosphoenolpyruvate carboxylase F. fructose 1,6-bisphosphatase

**Answers\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ⅱ. Short-answer questions （简答题）:**

1. What reaction is catalyzed by thymidylate synthase?
2. What is the effect of epinephrine on glycolysis in muscle?

Answer for QUIZ Ⅲ(December 11, 2014):

Ⅰ. Multiple choice questions (选择题):

1. D
2. E
3. B
4. D
5. ADF

Ⅱ. Short-answer questions （简答题）:

1. dUMP🡪dTMP
2. Glycolysis will be more active.