Chem 352, Fundamentals of Biochemistry
Lecture 10 - Part II: Lipid Metabolism
Supplemental Questions

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1. Both amino acid degradation and biosynthesis involve transamination reactions.

   a. What coenzyme is used in transaminase reactions?

   b. The mechanism for the transamination reactions involves the formation of a Schiff base. Schiff bases form between an amine and either a ketone or aldehyde. Draw a representative structure for a Schiff base.

   c. Using structures, write a balanced chemical equation for the transamination of alanine with α-ketoglutarate.

2. What is the primary function of the urea cycle?

   a. Draw the structure of urea

   b. What are the sources for the two nitrogen atoms in urea?

   c. What three α-amino acids serve as intermediates in the urea cycle? (Hint: Not all of these are the common α-amino acids used to make proteins.)

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3. List the cellular location of the reactions that take place in the urea cycle? Identify an amino acid that is synthesized starting from an intermediate in each of the following pathways

   a. Glycolysis -

   b. Citric Acid Cycle -