

CHEM-342 Introduction to Biochemistry
Final Examination - Individual Part
Monday, 26 May 2003
7:00 - 8:45 PM
H. B. White - Instructor

Name _____

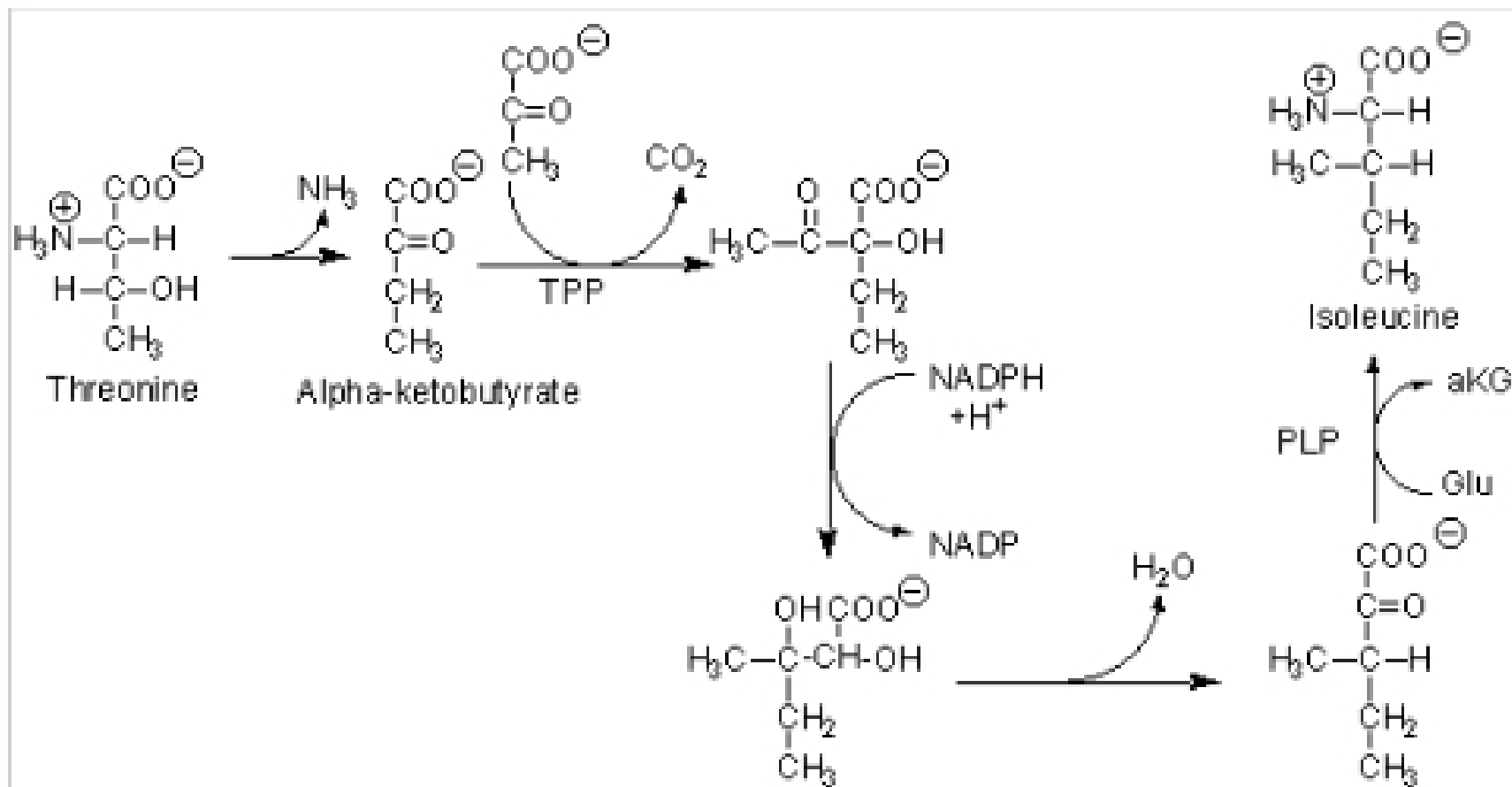
Important - Please read this before you turn the page.

- This examination will assess your learning, problem-solving skills, and ability to communicate clearly. It is intended to be challenging even to the best students in the class. Writing reflects how you think. Among the “right answers” I will read for the following questions, some will be better than others because they show greater depth of understanding, avoid extraneous or inaccurate information, provide a more logical structure, use appropriate examples, and choose words with precision. Better quality answers will receive higher marks. Therefore organize your thoughts before you write. Strive to write not that you may be understood, but rather that you cannot possibly be misunderstood. Stream of consciousness answers are rarely well organized or clearly presented.
- There are 9 pages to this part of the examination. Please write your name on each page.
- Part I (80 points) This individual part of the examination, includes 11 problems and short essay questions. Also, you can obtain up to 17 additional points from bonus questions.

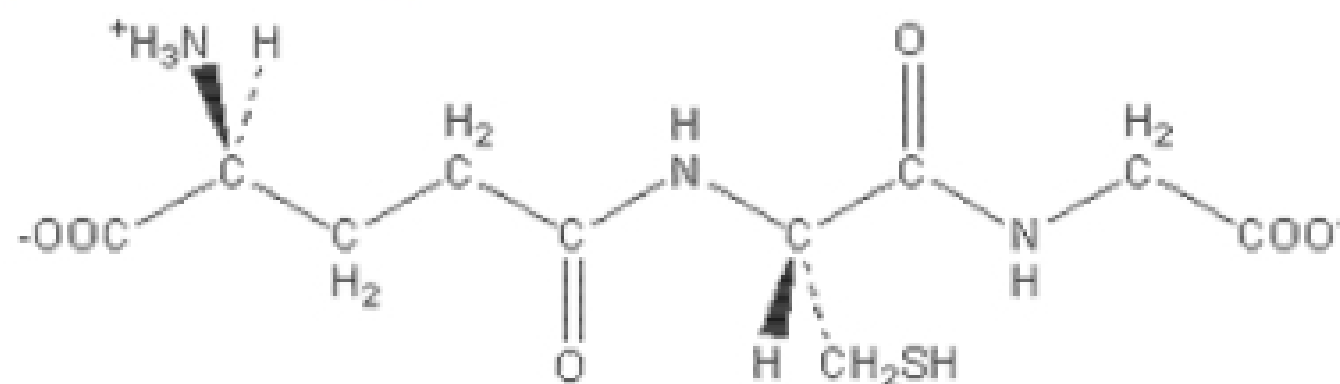
Part II (25 points) The group part of the examination includes 3 problems and a 5 point bonus question.
- If you complete Part I early, you may leave the room for a break and return at or before 8:45 PM when Part II begins.
- You may refer to your notes, course reader, handouts, or graded homework assignments.
- Attempt to draw a picture or diagram as part of your answer to every question.
- Graded examinations may be picked up Thursday morning, 29 May.
- Have a relaxing and safe Summer.

1. (5 points) You were asked to attend two biochemistry-related research seminars this semester. Describe one. (Speaker, topic, anything you learned)

circles around the carbon atoms of isoleucine that are derived from pyruvate.
 [Trivia: For reasons unknown, isoleucine is the only amino acid of the common 20 amino acids that is not usually present in human hemoglobin.]



5. (6 points) Red blood cells contain lots of glutathione (GSH), the tripeptide shown below. Among other things, GSH protects cells by scavenging reactive oxidants and forming the GSSG oxidized dimer (see question 9). In the space below, draw the structures of the three amino acids generated in the complete acid hydrolysis of glutathione. Identify each of the amino acids.



Glutathione (GSH)