Recitation Worksheet Zero

Name: *Key*   UGA ID:

Textbook:
Chemistry & Chemical Reactivity
by John C. Kotz, Paul M. Treichel, John R. Townsend, David Treichel
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Instructions:
- This recitation worksheet is optional, but **highly recommended** to complete.
- Please enter your first and last name as it <u>appears on the eLC roster</u> (do not use a nickname that is not reflected in eLC).
- Your UGA myID is a combination of letters and numbers (example: Dr. Seivert's MyID is mds73312). **Do not use your 81x number**.
- Your completed worksheet has to be submitted to **Gradescope**. You have multiple options for submission:
    - You may use an app to annotate the worksheet by placing your answers in the answer boxes and showing your work when appropriate. Afterward, submit the worksheet to Gradescope. You will not need to upload anything to eLC.
    - You may print out the worksheet, write your answers in the answer boxes, and show your work on it when appropriate. Afterward, convert the worksheet to a PDF and submit to Gradescope. You will not need to upload anything to eLC.
    - If you do not have access to a printer, you may type your answers directly into the worksheet PDF and then submit it to Gradescope. Write your work on separate sheets of paper, convert them to a PDF, and upload to the appropriate dropbox on eLC.
    - There is a Gradescope app available for both iOS and Android devices that allows you to scan and submit your printed work, or you can submit your fillable PDF directly.
- The following criteria **must** be met to be eligible for full credit:
    - You must make sure the pages are in the <u>correct order</u> and have the <u>same layout</u> as the original worksheet when submitting to Gradescope regardless of your submission type.
    - Answers must be written in the corresponding answer boxes.
    - You must show your work when appropriate.
- This worksheet is due no later than **9:00 AM on Saturday, August 17th**.

1. Worksheets submitted to Gradescope need to have the same formatting as the original for your answers to be properly grouped and graded. A real person grades all of your answers; the AI on Gradescope simply groups those answers together so they can be graded at once. This means you need to write legibly (if applicable) and check your submission formatting after uploading. Enter the letter "K" into the box below to practice.

K

2. If you're not able to write your work directly on this worksheet (if you don't have a digital annotation app or don't want to print this out and write on it), you'll need to submit your scratchwork separately to eLC. You still have to submit every worksheet to Gradescope! This is the most important part of the submission; it's what we actually grade.

To practice, use the infographic from compoundchem.com illustrated on the next page. How many amino acids does it list? Enter this as an integer (e.g. 13). Pick your favorite amino acid and redraw it (we'll learn more about what these drawings mean in chapter 8!). Submit this like you would scratchwork – either drawn on this worksheet or as a separate file to eLC, depending on your submission method.
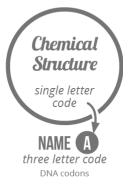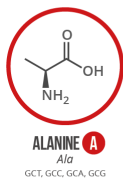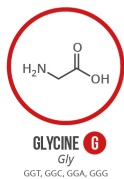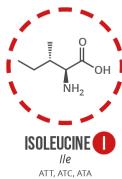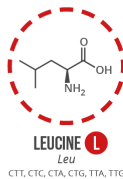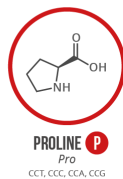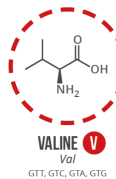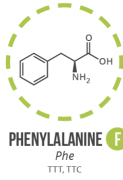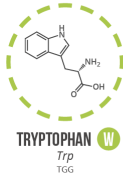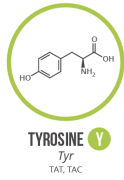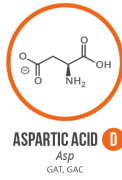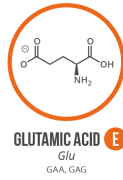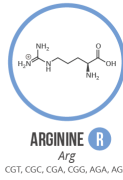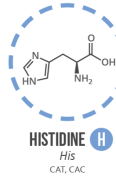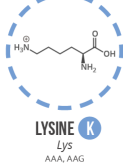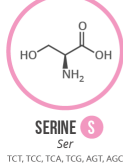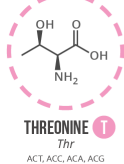
20
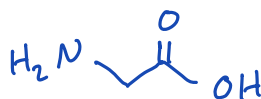
A GUIDE TO THE TWENTY COMMON AMINO ACIDS

AMINO ACIDS ARE THE BUILDING BLOCKS OF PROTEINS IN LIVING ORGANISMS. THERE ARE OVER 500 AMINO ACIDS FOUND IN NATURE - HOWEVER, THE HUMAN GENETIC CODE ONLY DIRECTLY ENCODES 20. 'ESSENTIAL' AMINO ACIDS MUST BE OBTAINED FROM THE DIET, WHILST NON-ESSENTIAL AMINO ACIDS CAN BE SYNTHESISED IN THE BODY.

Chart Key: ● ALIPHATIC ● AROMATIC ● ACIDIC ● BASIC ● HYDROXYLIC ● SULFUR-CONTAINING ● AMIDIC ◯ NON-ESSENTIAL ◌ ESSENTIAL
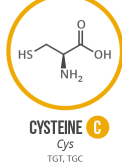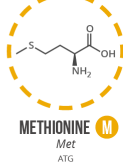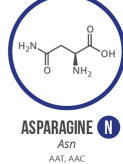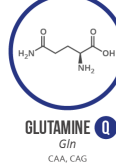
Chemical Structure
single letter code

NAME **A**
three letter code
DNA codons

ALANINE A
Ala
GCT, GCC, GCA, GCG

GLYCINE G
Gly
GGT, GGC, GGA, GGG

ISOLEUCINE I
Ile
ATT, ATC, ATA

LEUCINE L
Leu
CTT, CTC, CTA, CTG, TTA, TTG

PROLINE P
Pro
CCT, CCC, CCA, CCG

VALINE V
Val
GTT, GTC, GTA, GTG

PHENYLALANINE F
Phe
TTT, TTC

TRYPTOPHAN W
Trp
TGG

TYROSINE Y
Tyr
TAT, TAC

ASPARTIC ACID D
Asp
GAT, GAC

GLUTAMIC ACID E
Glu
GAA, GAG

ARGININE R
Arg
CGT, CGC, CGA, CGG, AGA, AGG

HISTIDINE H
His
CAT, CAC

LYSINE K
Lys
AAA, AAG

SERINE S
Ser
TCT, TCC, TCA, TCG, AGT, AGC

THREONINE T
Thr
ACT, ACC, ACA, ACG

CYSTEINE C
Cys
TGT, TGC

METHIONINE M
Met
ATG

ASPARAGINE N
Asn
AAT, AAC

GLUTAMINE Q
Gln
CAA, CAG

Note: This chart only shows those amino acids for which the human genetic code directly codes for. Selenocysteine is often referred to as the 21st amino acid, but is encoded in a special manner. In some cases, distinguishing between asparagine/aspartic acid and glutamine/glutamic acid is difficult. In these cases, the codes asx (B) and glx (Z) are respectively used.

3. Select all that apply questions require you to write the capital letters, no spaces or commas, in the answer box (e.g. ABCDE). These will always be clearly labeled on worksheets or exams. If not labeled, there should be only one correct answer! Select all that apply is graded with a right minus wrong scheme, so an incorrect answer counts against a correct answer. For example, if the correct answer is ACE, ABE will result in only 1/3 credit because B cancels out one of the correct answers. AE instead would result in 2/3 credit. Be judicious with your answer choices to these questions!

Let's practice. Which of the following is **correct**? Select all that apply and answer with capital letters and no spaces (e.g. ABCDE).

AC

A. Every worksheet has to be submitted to Gradescope, and scratch work may have to be submitted to eLC if not done directly on the worksheet
B. If the grader can't read your answer, they will assume it's correct
C. You must show your work, where applicable, for full credit
D. If the uploaded worksheet is not in the same layout as the original, Gradescope will just correct it

4. The same formatting includes making sure you have the same number of pages, in the same order, as the original. This is the most common reason recitations aren't able to be graded! How many pages should this submission have? You need to answer with the associated letter in the provided box.

D

A. One
B. Two
C. Three
D. Four