

Amino Acids Worksheet

1. Provide the one and three letter abbreviations for the following amino acids:

- a. tyrosine _____
- b. arginine _____
- c. lysine _____
- d. valine _____
- e. isoleucine _____

2. Which of the following are not side chains of amino acids?

- a. hydrocarbons
- b. alcohols
- c. ionized groups
- d. phosphoester groups
- e. aromatic groups

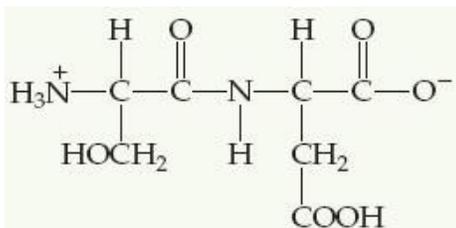
3. Which amino acid(s) contain alcohol functional groups in its side chain (exclude phenol)?

4. Which of the following does not represent a hydrophobic amino acid?

- a. alanine
- b. valine
- c. arginine
- d. methionine
- e. phenylalanine

5. When two amino acids undergo condensation, a _____ is formed.

6. Name the following dipeptide. Provide the name using the three letter amino acid abbreviations and the one letter abbreviations.



7. Draw the structure of leucine ($pI = 6.0$) at the following pH values and give the overall charge for each :

a. 6.0

b. 10.0

Answers

1.

- a. Y and Tyr
- b. R and Arg
- c. K and Lys
- d. V and Val
- e. I and Ile

2. d (phosphoester groups)

3. Serine and Threonine

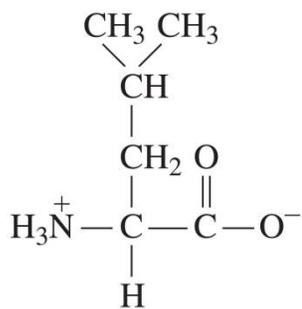
4. arginine

5. dipeptide

6. Ser-Asp and SD

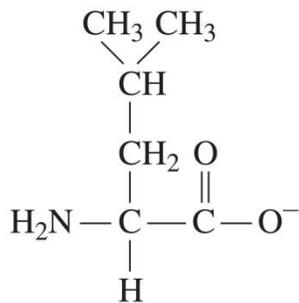
7.

a.



overall charge: 0 (zwitterion form)

b.



overall charge: -1 (basic form)