

## Biol 400: Chapter 4 Chapter questions Amino acids

Remember that you will need to recognize the amino acids, know which ones are acidic, basic, hydrophobic, and their relative size as well as any special considerations such as reactivity and special features (absorbance and such).

Book study exercises 1,2,3 and 5

Book problems 3,4,6, 7, 13, 14, 16

1 At pH 7.0, histidine would be:

- virtually all positively charged
- 50% charged
- Not charged
- 50% negatively charged
- Virtually all negatively charged

2 The isoelectric point for lys is ( $pK_{a1} = 3.1$ ,  $pK_{a2} = 8.0$ ,  $pK_{a3} = 10.3$ )

- 10.5
- 9.15
- 8.00
- 6.00
- 4.00

3 The interaction between two phenylalanine amino acids are?

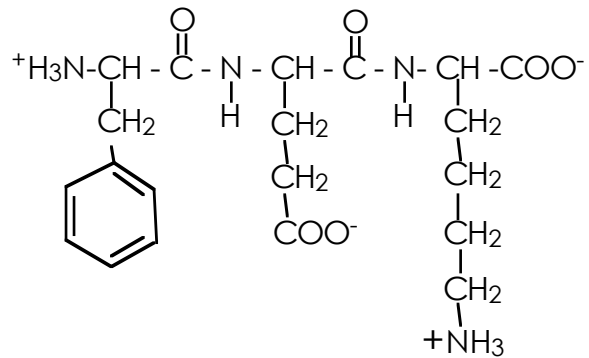
4 Which amino acids absorb in the ultraviolet portion of the spectrum?

5 Why is it that mutations that mutate a lys to an arg and ile to a leu often have little effect on a protein's function while an asp to glycine mutation would greatly affect a protein's function?

6 Which of the following peptides would be found in the interior portion of a protein?

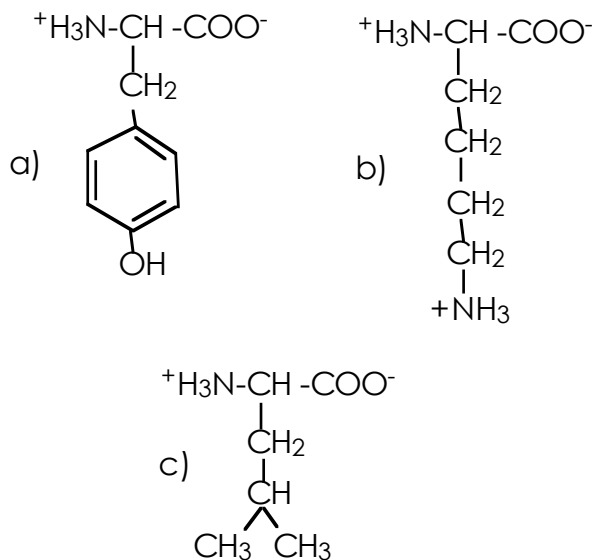
- A) Met-Val-Ile-Phe
- B) Asp-Glu-Gln-Asp

7 The overall charge of the following peptide sequence at pH 12 would be:



a) -3	d) +1
b) -2	e) +2
c) -1	f) +3

Consider the three amino acid shown below for questions 8 - 10



8) Which amino acid is most likely to be involved in a chemical reaction such as phosphorylation?

a) a	b) b
c) c	d) a and b
e) None of the above	

9) Which amino acid has an acidic side chain

a) a	b) b
c) c	d) None of the above

10) Which amino acid has a side chain that can form hydrophobic interactions

a) a	b) b
c) c	d) b and c
e) None of the above	

11) A glutamate in hemoglobin is sometimes mutated to a valine. If this is an exterior facing amino acid, what are the possible consequences of this mutation?