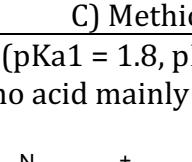


AMINO ACIDS AND PROTEINS PRACTICE TEST

1.	The isoelectric point of phenylalanine is $\text{pI} = 5.5$. Indicate which electrode it migrates toward in electrophoresis conducted at $\text{pH} = 14.0$.					
	A) It is not possible to answer because the solvent must be specified. B) It does not migrate. C) Negative pole. D) Positive pole.					
2.	Indicate the α -amino acid that has two nitrogen atoms..					
	A) Phenylalanine.		B) Tyrosine.			
	C) Lysine.		D) Serine.			
3.	Indicate the products of the reaction of the peptide Ala-Gly-Leu-Phe with carboxypeptidase.					
	A) Ala-Gly + Leu-Phe.		B) Ala + Gly-Leu-Phe.			
	C) Ala-Gly-Leu + Phe.		D) Ala + Gly + Leu + Phe.			
4.	Indicate the α -amino acid that has two nitrogen atoms.					
	A) Phenylalanine.		B) Tyrosine.			
	C) Alanine.		D) Lysine.			
5.	Indicate the predominant form of glycine at $\text{pH} = 9$.					
	A) $\text{NH}_2\text{CH}_2\text{CO}_2\text{H}$.		B) $\text{NH}_3^+\text{CH}_2\text{CO}_2\text{H}$.			
	C) $\text{NH}_2\text{CH}_2\text{CO}_2^-$.		D) $\text{NH}_3^+\text{CH}_2\text{CO}_2^-$.			
6.	Indicate the α -amino acid that has two nitrogen atoms.					
	A) Tyrosine.		B) Lysine.			
	C) Methionine.		D) Serine.			
7.	Knowing the pK_a values of histidine ($\text{pK}_a1 = 1.8$, $\text{pK}_a2 = 6.1$, $\text{pK}_a3 = 9.2$), at which pH , among those proposed, will the amino acid mainly be in dicationic form? ¹					
						
	A) 1.		B) 7.			
	C) 10.		D) Nobody.			
8.	Knowing the isoelectric point of the following amino acids, predict which pole they will migrate toward in electrophoresis conducted at $\text{pH} = 3.0$. $\text{pI} = \text{Asp: 3.0; Arg: 10.8; Ser: 5.7}$. ²					
	A) Asp = Does not migrate; Arg = Positive; Ser = Negative.		B) Asp = Positive; Arg = Negative; Ser = Does not migrate.			
	C) Asp = Negative; Arg = Negative; Ser = Does not migrate.		D) Asp = Does not migrate; Arg = Negative; Ser = Negative.			

¹ total ionic charge: +2.

² Arg = Arginine; Asp = Aspartic Acid; Ser = Serine.

9.	Indicate the α -amino acid that has two nitrogen atoms.			
	A) Lysine.	B) Phenylalanine.		
	C) Methionine.	D) Serine.		
10.	Indicate which α -amino acid has 3 nitrogen atoms.			
	A) Phenylalanine.	B) Tyrosine.		
	C) Alanine.	D) Istidina.		
11.	Knowing the pKa values of glutamic acid ($\text{pKa}_1 = 2.1$, $\text{pKa}_2 = 4.3$, $\text{pKa}_3 = 9.8$), at which pH, among those proposed, will the amino acid mainly be in monocationic form? ³			
	A) 1.	B) 3.	C) 7.	D) 12.

³ total ionic charge: +1.