

Test Bank 4 – L11 & 12

Written by:
Mahmood alabsi

Edited by:
Hashem Al-Jarrah



Q1: An amino acid consists of?

- A) Alpha carbon
- B) Carboxylic acid group (-COOH)
- C) Specific R group (the side chain)
- D) A hydrogen atom
- E) All the above

Answer: E

Q2: Choose the Non-polar amino acid ?

- A) Arginine
- B) Glutamine
- C) Aspartate
- D) Serine
- E) Methionine

Answer: E

Q3: Choose the polar amino acid ?

- A) Proline
- B) Glutamine
- C) Isoleucine
- D) Histidine
- E) Glycine

Answer: B

Q4: Essential amino acids means ?

- A) Polar and nonpolar amino acids
- B) Important for cell division
- C) Can not be produced by our bodies
- D) Tyrosine derivative
- E) None of the above

Q5: Aspartate and Glutamate are ?

- A) One has acidic R group, and the other does not
- B) Both have acidic R groups
- C) Both can be positively charged
- D) Both are considered uncharged polar
- E) None of the above

Answer: B

Q6: Choose the correct statement ?

- A) (Phe) is the main precursor for flight or fight neurotransmitters
- B) Tryptophan makes Melanin
- C) Tyrosine is a precursor for (Phe)
- D) Tryptophan is not aromatic
- E) Thyroxine has Fluorine (F)

Q7: Isoelectric point (pI) is ?

- A) The pH where the net charge of a molecules such as an amino acid or protein is zero
- B) The pH where the net charge of a molecules such as an amino acid or protein is not zero
- C) The pKa where the net charge of a molecules such as an amino acid or protein is zero
- D) The pH where the net charge of a molecules such as an amino acid or protein is +1

Q8: Amino acids:

- A) All have chiral carbon
- B) All have only 1 enantiomer
- C) Can not be ionized
- D) There are 15 amino acids
- E) Differ in shape and reactivity

Q9: Choose the correct pair ?

- A) Acidic – (Gly)
- B) Charged (positive) – (Asp)
- C) Charged (positive) – (Lys)
- D) Non-polar – (Arg)
- E) Polar – (Ala)

Answer: C

Q10: Choose the incorrect pair ?

- A) Non-polar – (Ile)
- B) Charged (positive) – (His)
- C) Polar – (Val)
- D) Charged (negative) – (Glu)
- E) Polar – (Arg)

Q11: Choose the correct statement?

- A) (Gly) is chiral
- B) Alanine has methyl group
- C) (Glu) is aromatic
- D) (Gly) is derived from (Glu)
- E) Alanine is the simplest amino acid

Q12: Choose the correct statement ?

- A) Citrulline is not an amino acid
- B) Body can produce (Ile) but can not produce (Val)
- C) Proline is one of 3 cyclic amino acids
- D) The Nitrogen in (Pro) is secondary when it is not in a chain
- E) (Pro) has a cyclic R group just like (Phe)

Q13: Methionine, Tryptophan and Phenylalanine are?

- A) Methionine has indole and (Trp) has sulfur
- B) Methionine has thioether group and can form (SAM)
- C) (Met) has thiol group and (SAM) can donate methyl
- D) (Trp) is the second largest amino acid and (Phe) has phenyl group
- E) (Phe) is the only aromatic Non-polar amino acid

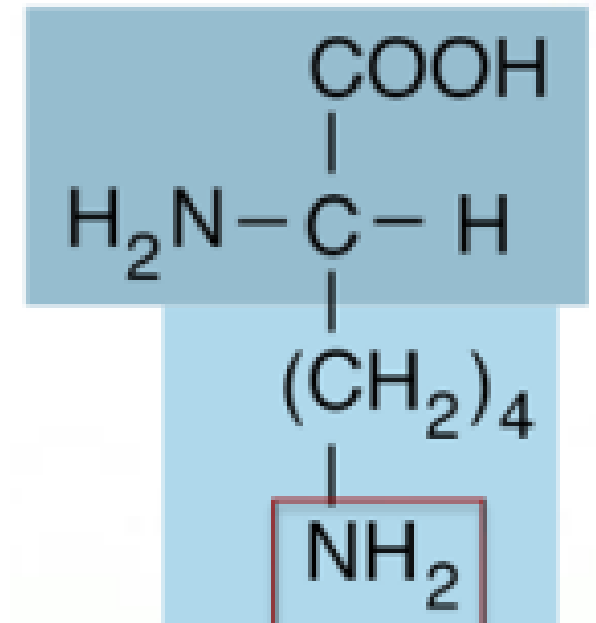
Well done, you have completed 50% of the test bank
Let's take a break and pray for our families in Gaza

لا تنسوا أهلنا في غزة

Answer: ALWAYS RIGHT

Q14: The amino acid in the picture and the amino acid that contains imidazole are in order ?

- A) The first is negatively charged, the second has ionizable Nitrogen
- B) The first is (Lys), the second is Tryptophan
- C) The first is Positively charged, the second is (Arg)
- D) The first is Lysine, the second is Aromatic
- E) The first has guanidinium, the second is Histidine



Answer: D

Q15: Choose the incorrect statement ?

- A) Serine and Threonine both include hydroxyl group
- B) (Cys) is a polar amino acid
- C) Serine and Threonine are both reactive
- D) (Cys) is reactive because of its hydroxyl group
- E) Cysteine makes disulfide bridges

Q16: Choose the correct statement ?

- A) (Phe) + hydroxyl group gives Tyrosine
- B) (Asn) contain carboxylic acid in its R chain
- C) Glutamine is polar amino acid with (Glu) abbreviation
- D) Carboxamide group found in (Asp)
- E) 2 or more are correct

Q17: Choose the incorrect statement ?

- A) (Trp) makes Melatonin
- B) Histidine is a neurotransmitter
- C) (L-Arg) makes (NO)
- D) Hydroxylysine and hydroxyproline are part of collagen structure
- E) (NO) causes vasodilation

Q18: Choose the incorrect statement ?

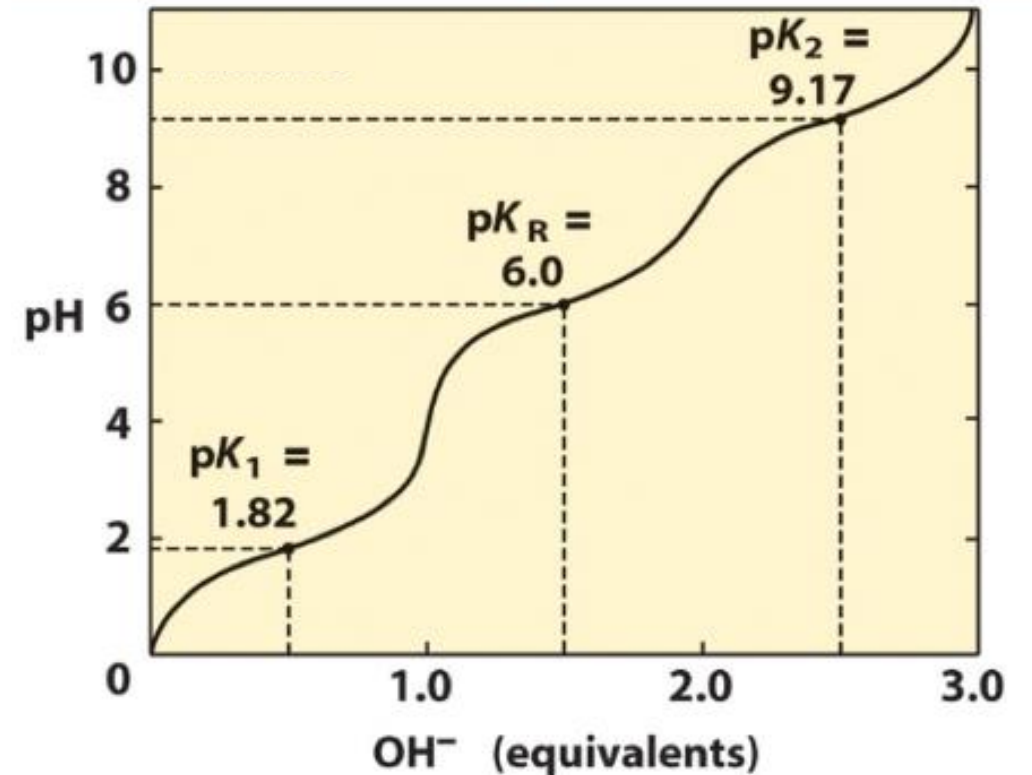
- A) (GABA) is an inhibitory neurotransmitter
- B) Gama – carboxyglutamate is essential for blood clotting
- C) Monosodium glutamate (MSG) is a flavor enhancer
- D) Vitamin D is essential for Gama – carboxyglutamate synthesis
- E) (NO) has a very short half life

Q19: Choose the incorrect statement ?

- A) The pK_a of the NH_2 attached to the alpha carbon is about 9
- B) Cysteine and tyrosine R chains can be ionized at high pH
- C) Tyrosine has pI of 9.5
- D) Lysine has a pI of 10
- E) Arginine has a relatively high pI

Q20: this image indicates a titration curve for ?

- A) Lysine
- B) Histidine
- C) Valine
- D) Tyrosine
- E) None of the above



Answer: B

Q21: What is the carboxylic group charge at pH 4 for Histidine and Tyrosine ?

- A) -1 , +2
- B) 0 , +1
- C) +1 , +2
- D) -1 , -1
- E) 0 , 0

Answer: D

Q22: Which of the following amino acids has 2 buffer ranges?

- A) Isoleucine
- B) Tyrosine
- C) Histidine
- D) Glutamic acid
- E) Cysteine

Answer: A

Q23: Order the following amino acids according to their isoelectric points ?

- A) (Arg) > (Cys) > (Glu)
- B) (Glu) > (Cys) > (Arg)
- C) (Cys) > (Arg) > (Glu)
- D) (Arg) > (Glu) > (Cys)
- E) (Glu) > (Cys) > (Arg)

Answer: A

Q24: Estimate the equivalents of OH^- needed to reach the isoelectric point of (Asp) and (Arg)?

Note: this question depends on estimation, NOT exact numbers

- A) 1 , 2
- B) 0.5 , 1.5
- C) 1.5 , 2
- D) 2 , 1.5
- E) 0.5 , 2

Q25: Choose the correct statement?

- A) Pk_a value for R groups is always above (PI) value
- B) pI is always between 2 and 9
- C) Histidine pI point as almost neutral
- D) Nitrogen atom in Tryptophan can be ionized
- E) 2 or more are correct

Q26: Which of the following compounds cannot exist?

- A) D-glutamate
- B) D-tryptophan
- C) L-lysine
- D) D-glycine
- E) D-histidine

Answer: D

Questions about the structures of amino acids

By Haneen Albanna

1. One of the amino acids listed below is not basic:

a-Arginine

b- Histidine

c-Glutamine

d-Lysine

2. Which of the following amino acid has a hydroxyl group?

a-Valine

b-Threonine

c- Leucine

d- Histidine

3. All the following amino acids are neutral, EXCEPT:

a- Aspartic acid

b- Tyrosine

c- Glycine

d-Threonine

4. All the following are branched chain amino acids, EXCEPT:

a-Valine

b-Leucine

c-Isoleucine

d-Threonine

5. All the following are Sulphur containing amino acids, EXCEPT:

a- Cysteine

b- Methionine

c- Homocysteine

d- Threonine

6. Guanido group is present in:

a- Arginine

b- Tryptophan

c- Histidine

d- Proline

7. Indole ring is present in:

a- Arginine

b- Tryptophan

c- Histidine

d- Proline

بالنسبة للسؤال الأول ما تم ذكره في المحاضرات لكن كلهم
basic ما عدا ال glutamine تم اعتباره neutral لاتصال
ال N with co يعني باختصار

Arginine, Histidine, and Lysine are considered basic amino acids due to their side chains containing amino groups that can accept protons, making them positively charged at physiological pH.

Glutamine, on the other hand, has an amide side chain and does not have a basic group.