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## Biochemistry for Medics–Lecture Notes

POSTED IN MULTIPLE CHOICE QUESTIONS

Multiple choice questions – Revision -Amino acid chemistry

Q.1-The alpha helix rises per turn a distance of–

a) 0.54nm

b) 1.5nm

c)3nm

d)1.83nm

Q.2-An antibiotic peptide out of the following-

a)Bleomycin

b)Penicillin

c)Microcystine

d)Creatine

Q.3-Which protein out of the given has a length: width ratio>10?

a)Hemoglobin

b)Myoglobin

c)Fibrinogen

d)Albumin

Q.4-Which of the following amino acids is abundantly found in collagen?

a) Glycine

b) Serine

c) Alanine

d) Tryptophan

Q.5-Choose the in correct statement about peptide bond out of the following?

a)Partial double bond character

b)Stable

c)Trans in configuration

d)Charged and polar

Q.6-Which out of the following is a confirmatory test for Tryptophan?

a) Sakaguchi test

b) Ninhydrin test

c) HopkinCole test

d) Millon's test

Q.7-Pulses contain in complete proteins in cethey lack-

a)Lysine

b)Tryptophan

c)Phenylalanine

d)Methionine

Q.8-All of the following are interactions that stabilize the tertiary structure of a protein except-

a)Vander Waal's

b)Hydrogen

c)Peptide

d)Ionic

Q.9-Which out of the following is NOT a non standard amino acid?

a)Hydroxy Proline

b)Beta Alanine

c)Ornithine

d)Arginine

Q.10-Choose the right set of amino acids in the structure of Glutathione-

a)Glutamine-Glycine-Cysteine

b)Cysteine-Glycine-Glutamic Acid

c)Glutamic acid-Glycine-Cysteine

d)Glutamic acid-Cysteine-  
Glycine

Q.11-Which out of the following is not a conjugated protein?

a)Albumin

b)Low density lipoprotein

c)Glycoprotein

d)Visual purple

Q.12-Which out of the following features is not observed at isoelectric pH of a protein?

a)Maximum solubility

b)Minimum Electrophoretic migration

c)Maximum precipitation

d)Maximum Viscosity

Q.13-Which out of the following is a set of hydrophobic amino acids?

a)Aspartic acid-Valine-Isoleucine

b) Arginine-Lysine-Methionine

c) Hydroxy proline-Histidine-Glutamine

d) Valine-Methionine-Isoleucine

Q.14-Choose the incorrect statement out of the following-

a) Only L amino acids are found in the biological system

b) Glycine is optical in active

c) Tyrosine is a modified amino acid

d) Selenocysteine is 21<sup>st</sup> amino acid

Q.15-Which out of the following amino acids is a precursor of niacin(Vitamin)?

- a)Tyrosine
- b)Threonine
- c)Tryptophan
- d)Phenylalanine

Q.16-Which of the following peptides is cyclic nature?

- a)Glutathione
- b)Gramicidin-S
- c)Metencephalin

d)Leuencephalin

Q.17-Which out of the following amino acids is a precursor of a mediator of allergies and inflammation?

a)Histidine

b)Tyrosine

c)Phenyl Alanine

d)Tryptophan

Q.18-The most potent vasoconstrictor peptide out of the following is-

a)Vasopressin

b)AngiotensinII

c)Bradykinin

d)Angiotensinogen

Q.19-Which of the following amino acids is detected by Sakaguchi test?

a)Tyrosine

b)Tryptophan

c) Alpha amino acids

d)Arginine

Q.20-Which out of the following protein does not possess a quaternary structure?

a)Myoglobin

b)Lactate dehydrogenase

c)Immunoglobulin M

d)Creatine PhosphoKinase

Key to Answers

1)-a,2)-b,3)-c,4)-a,5)-d,6)-c,7)-d,8)-c,9)-d,10)d,11)-a,12)-a,13)-d,14)-c,15)-a,16)-b,17)-a,18)-b,19)d,20)-a.

## Multiple Choice Questions-Amino acid and protein chemistry

1)–A mutation has changed an isoleucine residue of a protein to Glutamic acid, which statement best describes its location in a hydrophilic exterior-

- a)On the surface since it is hydrophilic in nature
- b)Inside the core of the protein since it is hydrophobic in nature
- c)Anywhere inside or outside
- d)Inside the core of protein since it has a polar but uncharged side chain

2)–Glycine and proline are the most abundant amino acids in the structure of-

a)Hemoglobin

b)Myoglobin

c)Insulin

d)Collagen

3)–Some proteins contain additional amino acids that arise by modification of an amino acid already present in a peptide, examples include-

a) 4-hydroxyproline

b) 5-hydroxyLysine

c) Gamma Amino Butyric Acid

d) All of the above

4) – Choose the incorrect statement out of the following-

a) Only L amino acids are found in the biological system

b) Glycine is optical inactive

c) Tyrosine is a modified amino acid

d) Selenocysteine is 21 stamino acid

5) – Choose an anopeptide out of the following-

- a)Oxytocin
- b)Vasopressin
- c)Bradykinin
- d>All of the above.

6)–Which out of the following amino acids carries a net positive charge at the physiological pH?

- a)Valine
- b)Leucine
- c)Isoleucine
- d)None of the above

7)–Which out of the following amino acids is a precursor for a mediator of allergies and inflammation?

a) Histidine

b) Tyrosine

c) Phenyl Alanine

d) Tryptophan

8)–Mother of a malnourished child has been instructed to include a complete protein in diet for her child, which out of the following proteins should be recommended?

a) Pulses

b)Wheat  
c)Soy Protein

d)Milk

9)—All of the below mentioned amino acid scan participate in hydrogen bonding except one—

a)Serine

b)Cysteine

c)Threonine

d)Valine

10)–All of the following amino acids are both glucogenic as well as ketogenic except–

a)Isoleucine  
b)Leucine

c)Tyrosine

d)Phenylalanine

11)–Which out of the following amino acid is a precursor of niacin (Vitamin)?

a)Tyrosine

b)Threonine

c)Tryptophan

d)Phenylalanine

12)–The greatest buffering capacity at physiological pH would be provided by a protein rich in which of the following amino acids?

a)Serine

b)Cysteine

c)Alanine

d)Histidine

13)–Which of the following peptides is cyclic in nature-?

a)Glutathione

b)Gramicidin

c)Metencephalin

d)Leuencephalin

14)–Which out of the following is not a fibrous protein?

a)Carbonic anhydrase

b)Collagen

c)Fibrinogen

d)Keratin

15)-Which of the following amino acid is a limiting amino acid in pulses?

- a)Leucine
- b)Lysine
- c)Methionine
- d)Glutamine

16)-Which out of the following is not a haemoprotein?

- a)Catalase
- b)Myeloperoxidase
- c)Glutathione peroxidase

d) Aconitase

17)–All the below mentioned proteins are metallo proteins except-

a) Carbonic anhydrase

b) Xanthine oxidase

c) Lactate dehydrogenase

d) Superoxide dismutase

18)–Which out of the following is a peptide antibiotic?

a) Erythromycin

b) Gramicidin

c) Ciprofloxacin

d) Tetracycline

19)–Choose the Anti-cancer peptide out of the following-

a) Bleomycin

b) Methotrexate

c) Cytosine Arabinoside

d) Di deoxyl nosine

20)–Which of the following amino acids is most compatible with an  $\alpha$ -helical structure?

a) Tryptophan

b) Alanine

c) Leucine

d) Proline

21)–The highest concentration of cysteine can be found in-

a) Melanin

b) Keratin

c) Collagen

d) Myosin

22)–In scurvy, which amino acid that is normally part of collagen is not synthesized?

a) Hydroxy Tryptophan

b) Hydroxy Tyrosine

c) Hydroxy Alanine

d) Hydroxy Proline

23)–A child with tall stature, loose joints, and detached retinas is found to have a mutation in collagen. Which of the following amino acids is the recurring amino acid most likely to be altered in mutations that distort collagen molecules

a) Glycine

b) Tyrosine

c) Tryptophan

d) Tyrosine

24)–Which one of the following amino acids may be considered a hydrophobic amino acid at physiological pH of 7.4?

a) Isoleucine

b) Arginine

c) Aspartic acid

d) Threonine

25)–Which of the characteristics below apply to amino acid Glycine?

- a) Optically inactive
- b) Hydrophilic, basic and charged
- c) Hydrophobic
- d) Hydrophilic, acidic and charged

26)–Which of the following amino acids in myoglobin, a globular protein, is highly likely to be localized within the interior of the molecule?

- a) Arginine
- b) Valine

c) Aspartic acid

d) Lysine

27)–Which of the amino acids below is the uncharged derivative of an acidic amino acid?

a) Cystine

b) Tyrosine

c) Glutamine

d) Serine

28)–Choose the correct category for milk protein case in out of the following-

a) Nucleoprotein

b) Phosphoprotein

c) Lipoprotein

d) Glycoprotein

Answers-

1- a

2- d

3- d

4- c

5- d

6- d

7- a

8- d

9- d

10- b

11- c

12- d

13- b

14- a



15- c

16- d

17- c

18- b

19- a

20- b

21- b

22- d

23- a

24- a

25- a

26- b

27- c

28- b

