

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) In side the core of the protein since it is hydrophobic in nature
- c) Any where 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 -hydroxy proline
- b) 5- hydroxy Lysine
- c) Gamma Amino Butyric Acid
- d) All of the above

4- Choose the incorrect statement out of the followings-

- a) Only L amino acids are found in the biological system
- b) Glycine is optical inactive

- c) Tyrosine is a modified amino acid
- d) Seleno cysteine is 21 st amino acid

5- Choose a nano peptide out of the followings-

- 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 p H ?

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

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 mal nourished child has been instructed to include a complete protein in diet for her child, which out of the followings proteins should be recommended?

- a) Pulses
- b) Wheat
- c) Soy Protein
- d) Milk

9- All of the below mentioned amino acids can 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) Phenyl alanine

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 p H 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) Met enkephalin
- d) Leuencephalin

14- Which out of the followings 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 haemo protein ?

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

17- All the below mentioned proteins are metalloproteins 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 Anticancer peptide out of the followings-

- a) Bleomycin
- b) Methotrexate
- c) Cytosine Arabinoside

d) Dideoxy Inosine

20- Which of the following amino acids is most compatible with an α - helical structure?

a) Tryptophan

b) Alanine

c) Leucine

d) Proline

21- The highest concentration of cystine 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 p H 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 casein out of the followings

- a) Nucleoprotein
- b) Phospho protein
- c) Lipoprotein
- d) Glycoprotein

Answers-

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|-------|-------|-------|
| 1- a | 11- c | 21- b |
| 2- d | 12- d | 22- d |
| 3- d | 13- b | 23- a |
| 4- c | 14- a | 24- a |
| 5- d | 15- c | 25- a |
| 6- d | 16- d | 26- b |
| 7- a | 17- c | 27- c |
| 8- d | 18- b | 28- b |
| 9- d | 19- a | |
| 10- b | 20- b | |