Benha University 3rd level exam .,May 2017

Faculty of science Biotechnology group

Zoology Biochemistry2( 303z)

Physiology subdivision Time allowed:2hrs

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**Answer the following questions**

**I)Choose the correct answer(5marks)**

1-Glutathione is :

a-A true peptide

b-Alpha-Glutamyl-cyseinyl-glycine

c-Non of the above

2-The only Ig capable of crossing placenta is :

a-IgG

b-IgE

c-IgA

3-An aromatic Amino acid is :

a-Lysine

b-Taurine

c-Tyrosine

4-A ketogenic amino acid Is :

a-Leucine

b-Therionine

c-valine

5-The protein present in hair is :

a-Elastin

b-Myosin

c-Keratin

6-Two amino groups are present in :

a-leucine

b-Therionine

c-Lysine

7-Branched chain amino acids are :

a-Valine,leucine and isoleucine

b-Tyrosine and tryptophan

c-glycine and serine

8-IgM processes:

a-Two light chains and two heavy chains

b-Ten light chains and ten heavy chains

c-six light chains and thick heavy chains

9-All amino acids contain asymmetric carbon atom except:

a-Leucine

b-Alanine

c-Glycine

10-Sulfer containing amino acid is :

a-Methionine

b-Leucine c-Valine

**II)Define:**

1-Proteins of high biological value (2marks)

2-Denaturation of protein (1 mark)

3-Salting out (1mark)

**III)Differentiate between(9marks):**

1-Hemoglobin and myoglobin

2-Deamination and transamination

**IV)Explain:**

1-Forces stabilizing 2ry ,3ry and 4ry structures of protein (2marks)

2-Amino acids can react with both acids and bases.(2marks)

3-Functions of globin protein in Hb (2marks)

…………………………………………………………………………………………………

**The answer:**

I)

1-c

2-a

3-c

4-a

5-c

6-c

7-a

8-b

9-c

10-a

II)

1-proteins of high biological value are nutriotionally rich proteins called complete proteins.They contain all thee essential amino acids in the required proportion.They easily digested.eg:casine of milk and lentils and peans proteins.

2-Denaturation is defined as destruction of the organization of the protein moleules(2ry,3ry and 4ry)so the polypeptide chains becomes unfolded and irregularly arranged.

3-Salting out is pericipitation,separation of protein from its solution by saturation or partial saturation with a neutral salts.

III)

1-Hb is a metal protein present in RbCs .It has a red color. It’s a chromoprotein. The 1ry function of Hb is a transport of O2 to every tissue and remove CO2 from them.

Myoglobin is formed of one heme attached to one polypeptide chain. It is found in high concentration in skeletal and cardiac muscle.

2-Deamination is the removal of amino group from amino acid with liberation of ammonia . It includes :

-Oxidative deamination -Reductive deamination

-Hydrolytic deamination.

Transamination is transfer of amino group from alpa amino acid to alpha keto acid forming new alpha amino acid and new alpha keto acid without production of ammonia .

IV)

1-a)The hydrogen bond

b)Disulphide bond

c)The ionic bond

d)Hydrophobic bond.

2-Due to amphoteric properities. In acidic ph the amino acid carries +ve charges and can react with alkali.In alkaline ph the amino acid carries

-ve charges and can react with acid.

3-

-Keeps the iron of Hb in ferrous state.

-Renders heme molecule soluble.

-Buffering action.

-Responsible for Sigmoid O2 curve.