

CHU 3139 BOICHEMISTRY-1
Answer guide for Assignment test-1(2006/2007)



1) Part-1

- a) Proteins + carbohydrates (Polysaccharides)
- b) Phosphate group + Lipid + Small organic molecules
- c) Protein + Carbohydrates (Oligosaccharides)
- d) Carbohydrates (Polysaccharides) + Peptides

Part-11

DNA- Adenine, Guanine, Thymine, Cytosine.

RNA- Adenine, Guanine, Uracil, Cytosine

Part-111

For amino acids, Ninhydrin test, give blue-purple color

For peptide bonds, Biuret test, give purple color.

Part-1V

Two amino acids combined together releasing one water molecule. Amine group of one amino acid combines with carboxylic group of the other amino acid to form amide bond.

Part-V

The separation based on the charge and size of the protein. Large proteins move slowly while high charge proteins move fast. Rate of movement depend on charge/mass ratio. Separate mixture of proteins by this technique.

2) Part-1

Denaturation disrupts higher levels of organization, loss biological activity of protein at extreme PH and temperature. Renaturation is regaining of the native structure and biological activity of protein at normal PH, temperature.

Part-11

Slow cooling, Bringing back to normal PH value, Oxidation of disulphide bonds, Addition of Urea solution to boiled egg.

Part-111

Primary structure is the sequence of amino acids and have disulphide or peptide or covalent or amide bond.

Secondary structure is the polypeptide chain folded within a length of the chain and have H-bonds.

Tertiary structure is the overall folding of the polypeptide structure and have H-bonds.

Quaternary structure is the association of two or more polypeptides to form large molecules and have hydrophobic bonds, Ionic bonds, H-bonds, Vanderwaal's bond.

Part-1V

Antibody produced by organism to fight against antigen. It has 4 peptide chains. 5 Classes are IgA, IgD, IgE, IgM, IgG.

Part-V

Proteins are positively or negatively charged depending on the PH, and ionic strength of the solution. Iso-electric solution is neutral. Solubility of uncharged proteins is very low at this PH. If the solubility is low at iso-electric PH those proteins are precipitated. The importance of this technique is to separate proteins.