9/10/2013

D09101 3 - BIOCHEMISTRY-I F.Y.B.Sc SEM I 60 MARKS 2 HRS 30

- **All questions are compulsory.**
- **All questions carry equal marks.**
- **Draw diagram wherever necessary**

Q. I) A) Answer the following in short (any two) (4M)

1. Define mole
2. Define pH.
3. What is Dissociation constant?
4. Define Hydronium ion

B) Answer the following in brief (any two) (6M)

1. Write a short note on Equilibrium constant.
2. Give the properties of water.
3. State henderson-hasselbalch equation
4. Explain how pH changes in biological system.

C). Explain water & its effects on biomolecules & properties of water. (5M)

OR

C) Explain the effect of non-polar compounds on the water with a suitable diagram. (5M)

(4M)

Q. II) A) Answer the following in short (any two)

1. Explain the primary structure of proteins.
2. Explain negatively charged R-groups of amino acid.
3. What is a zwitterion? Or explain amino acid as a zwitterions.
4. What is protein denaturation?

B) Answer the following in brief (any two) (6M)

1. Explain Non-polar Aliphatic R-groups of amino acid.
2. Write in brief about the Quaternary structure of proteins.
3. What are the physical properties of amino acid?
4. Explain the α-helix structure of proteins.

C) On what basis are the proteins classified? Classify on the basis of ASBC and APS. (5M)

OR

C) How can we detect the presence of an amino acid in a given sample? (5M)

Q. III) A) Answer the following in short (any two) (4M)

1. Define Anomers.
2. What are aldoses?
3. What are epimers? Give an example.
4. What are monosaccharides?

B) Answer the following in brief (any two) (6M)

1. Explain how glycogen acts as a storage carbohydrate.
2. What are heteropolysaccharides?
3. Write a note on Cellulose.
4. Explain in brief about starch.

Contd./...2