

**SARDAR PATEL UNIVERSITY**  
**Programme: B.Sc**  
**Semester: III**  
**Syllabus with effect from: June-2012**

<b>Paper Code: US03EBCH01</b>	<b>Total Credit: 2</b>
<b>Title of Paper: Fundamentals of Biochemistry - I</b>	

<b>Unit</b>	<b>Description in detail</b>	<b>Weightage (%)</b>
<b>I</b>	<b>Water</b> Structure of water Distribution of body water Measurement of body water Distribution of electrolytes in the body Normal water balance and its regulatory mechanism Abnormal water and electrolytes metabolism	<b>25%</b>
<b>II</b>	<b>Carbohydrates</b> Introduction, Occurrence, Physiological importance, Classification of carbohydrates- Monosaccharide, Disaccharides, Oligosaccharides and Polysaccharides Physiological properties of carbohydrates, reference carbohydrates. Asymmetric centers in Monosaccharide, optical isomerism, stereoisomerism, epimers, mutarotation, and diastereoisomers. Configuration in sugars, cyclic structure, anomeric carbon atom, Fischer's projection formula, Haworth's representation, conformation in sugars. Physiological importance of maltose, lactose and raffinose Polysaccharides- starch, glycogen,	<b>25%</b>
<b>III</b>	<b>Amino Acids &amp; Proteins</b> Amino acids and Proteins-Structure and Classification of amino acid, rare amino acids of protein, non-protein amino acids, amphoteric nature of amino acids, titration curve of Glycine. Physical properties of amino acids-sterio-specificity and optical activity. Denaturation of protein.	<b>25%</b>
<b>IV</b>	<b>Separation &amp; Purification Technique - II</b> Centrifuge technique: Basic principle, Instrumentation and application of ultra-centrifugation. Techniques of chromatography: general principle, classification, method and application of Paper chromatography, TLC	<b>25%</b>

