**Curriculum Plan (Odd Semester 2022-23)**

Teacher Name: **Dr. Renu Bala**

Course: **B.Sc. (H) Chemistry, III year, Sem V**

Paper Name: **ORGANIC CHEMISTRY – IV, Biomolecules**

UPC: **32171501**

Month: **July’22 to November’22**

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| **Contents** | **Allocation of Lectures** | **Month wise schedule to be followed** | **Assignments/ Presentations/Preparation in Lab etc** |
| **Amino Acids, Peptides and Proteins**  Amino acids, Peptides and their classification. α-Amino Acids - Synthesis, ionic properties and reactions.  Zwitterions, pKa values, isoelectric point and electrophoresis; Study of peptides: determination of their primary structure-end group analysis. Synthesis of peptides using N-protecting, C-protecting and C-activating  groups, Solid-phase synthesis; primary, secondary and tertiary structures of proteins,  Denaturation of proteins. | 12 | July - Aug | Lectures, Assignment, Test preparation, Quiz, Previous year question papers discussions etc. |
| **Carbohydrates and lipids**  Occurrence, classification and their biological importance. Monosaccharides: Constitution and absolute  configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of  glucose and fructose, Haworth projection and conformational structures; Interconversion of aldoses and  ketoses; Killiani-Fischer synthesis and Ruff degradation; Disaccharides – Structure elucidation of  maltose, lactose and sucrose. Polysaccharides – Elementary treatment of starch, cellulose and glycogen.  Introduction to oils and fats; common fatty acids present in oils and fats, Hydrogenation of fats and oils,  Saponification value, acid value, iodine number. Reversion and rancidity. | 21 | Sept - Nov | Lectures, Assignment, Test preparation, Quiz, Previous year question papers discussions etc. |

**Dr. Renu Bala**

**Department of Chemistry**