**PG.GOVT COLLEGE FOR GIRLS, SECTOR-42, CHANDIGARH**

**Teaching Plan Even Semester**

**Session (2018-19)**

**Class: M.Sc II Name of the Teacher:Dr. Garima**

**Subject: Plant Biochemistry Period : II (4) IV (4,6) VI (1)**

**Paper : XVI Room No : 213**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 14 /01/2019 – 19/01/2019 | Concept of free energy changes, Laws of Thermodynamics, Exergonic and  Endergonic Reactions |
| Week 2 | 21/01/2019 –  25/01/2019 | Entropy and Energy, Free Energy and Equilibrium Constant, Redox  potential. |
| Week 3 | 28/01/2019 –  2/02/2019 | Weak intereactions in aqueous systems, Ionization  of water Weak acids and Weak bases; Buffering against pH changes in biological systems, |
| Week 4 | 4/02/2019 –  9/02/2019 | Henderson-Hassalbach equation. The fitness of the aqueous environment for living organisms. |
| Week 5 | 11/02/2019 –  16/02/2019 | Structure types, properties and Metabolism of Amino acids; Primary,  Secondary, Tertiary and Quatenary structure of proteins ; domains, motif and folds; stability of  protein structure |
| Week 6 | 18/02/2019 –  23/02/2019 | Classification of proteins based on composition, solubility function; Reverse  turns and Ramachandran plot. |
| Week 7 | 25/02/2019 –  02/03/2019 | Nomenclature and Classification; Enzyme Kinetics; Mode and Mechanism of Enzyme  Action ,Enzyme Regulation, Activators, Inhibitors and Isoenzymes : Allosteric enzymes. |
| Mid Semester Exam | | |
| Week 8 | 11/03/2019 –  16/03/2019 | Classification, composition and structure of Carbohydrates (Polysaccharides,  Glycoproteins and Peptidoglycan), Stereoisomerism, |
| Week 9 | 18 /03/2019 –  22/03/2019 | Transformation of Carbohydrates, Synthesis  and degradation of Sucrose, Starch, Cellulose.Classification, Structure and functions; Biosynthesis of Fatty Acids |
| Week 10 | 25/03/2019 –  30/03/2019 | Compounds of Energy Transfer *:* Adenosine Triphosphate, Uridine Triphosphate. Cytidine  Triphosphate, Guanosine Triphosphate |
| Week 11 | 1/04/2019 –  6/04/2019 | Compounds of Redox Reactions *:* Nicotinamide Adenine Dinucleotide (NAD). Nicotinamide  Adenine Dinucleotide Phosphate (NADP), flavin Mononucleotide (FMN), Flavin Adenine  Dinucleotide (FAD), Ascorbic Acid, Coenzyme, Cytochromes. |
| Week 12 | 8/04/2019 –  12/04/2019 | Sites and mechanism of Oxidative  phosphorylation; Processes generating substrates for Oxidative Phosphorylation, Coupled  Reactions, Group Transfer, Biological energy Transducers ; Oxidation of Carbohydrates  (Regulation and Mechanism of T.C.A. cycle) and Oxidation of fats. |
| Week 13 | 15/04/2019 –  20/04/2019 | Structure, and functions of Thiamine, Riboflavin, Nicotinic Acid, Pantothenic Acid,  Pyridoxine, Biotin, Folic Acid, Vitamin B12 , Ascorbic Acid, Vitamin A , D , E and K. |
| Week 14 | 22/04/2019 –  27/04/2019 | Biosynthesis of terpenes and phenols and alkaloids and their role. |
| Week 15 | 29 /04/2019 –  3/05/2019 | Revision |

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**Teaching Plan Even Semester**

**Session (2018-19)**

**Class: M.Sc. II Name of the Teacher: Dr. Garima**

**Subject: Genetics and Plant Breeding Period : III (4) V (3)**

**Paper :XVIII Room No : 213**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 14 /01/2019 – 19/01/2019 | Multiple Allele, Pseudo-alleles, Complementation tests, Pleiotropy,  Genomic imprinting, Penetrance and Expressivity, Phenocopy, |
| Week 2 | 21/01/2019 –  25/01/2019 | Linkage and Crossing over, Sex  Linkage, Sex limited and Sex influenced characters. |
| Week 3 | 28/01/2019 –  2/02/2019 | Recombination, Molecular Mechanism  of Recombination, Role of RecA and RecBCD enzymes, Site-specific recombination, |
| Week 4 | 4/02/2019 –  9/02/2019 | Linkage maps, Tetrad analysis - Centromere mapping in linear tetrads and Analysis of unordered tetrads. |
| Week 5 | 11/02/2019 –  16/02/2019 | The Genetics of mitochondria and chloroplasts. |
| Week 6 | 18/02/2019 –  23/02/2019 | Genetic transformation, conjugation and transduction in bacteria  Multigene families and their evolution*.* |
| Week 7 | 25/02/2019 –  02/03/2019 | Mapping the bacteriophage genome; phage phenotypes; genetic  recombination in phage |
| Mid Semester Exam | | |
| Week 8 | 11/03/2019 –  16/03/2019 | Polygenic inheritance, Heritability and its measurements, |
| Week 9 | 18 /03/2019 –  22/03/2019 | Pedigree analysis, Lod score for linkage testing, Genetic disorders. |
| Week 10 | 25/03/2019 –  30/03/2019 | Gene pool, Gene frequency, Hardy- Weinberg Law |
| Week 11 | 1/04/2019 –  6/04/2019 | Concepts and rate of  change in gene frequency through mutation, |
| Week 12 | 8/04/2019 –  12/04/2019 | Natural selection and migration ; random genetic  drift. |
| Week 13 | 15/04/2019 –  20/04/2019 | QTL mapping. |
| Week 14 | 22/04/2019 –  27/04/2019 | Revision |
| Week 15 | 29 /04/2019 –  3/05/2019 | Revision |