**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Odd Semester) Session (2019-2020)**

**Class:** aB.Sc. Ist year **Name of the Teacher:** Dr. Davinder kaur

bB.Sc. IIIrd year

c, dM.Sc. Ist year

**Subject:** aCell biology **Period:** a5th (4,5,6)

bPlant physiology b1st (2,4,6)

cAlgae and dLab. Tech c2nd (2,3,4) and **d**2nd (5,6)

**Paper:**  aBotany (P-B) **Room No:** a128

bBotany (P-A) b219

Paper c I and dIV c,d211

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 23-07-2019 to 27-07-2019 | **a**Ultrastructure and function of typical plant cell  **b**Importance of water to plant life, physical properties of water, imbibition, diffusion  **c**Criteria for algal classification  **d**Principles and applications of microscopy |
| Week 2 | 29-07-2019 to 03-08-2019 | **a**Ultrastructure and function of Endoplasmic reticulum and Golgi apparatus  **b**Osmosis, Plasmolysis, Deplasmolysis, concept of osmotic potential  **c**Comparative account of important systems of classification (Fristch and Round)  **d**Principles and applications of tracer techniques in biology and autoradiography |
| Week 3 | 05-08-2019 to 10-08-2019 | **a**Ultrastructure and function of Lysosome and Mitochondria  **b**Water potential and pressure potential, absorption of water, active and passive mechanism of water absorption  **c**Chapman and Lee system of classification  **d**pH metery |
| Week 4 | 13-08-2019 to 17-08-2019 | **a**Ultrastructure and function of Plastids and nucleus  **b**Transport of water, mechanism and theories to explain ascent of sap,  **c**Diversity in algal habitat  **d**Principle, procedure and application of paper and thin layer chromatography |
| Week 5 | 19-08-2019 to 24-08-2019 | **a**Ultrastructure and function of Ribosome, cell wall and plasma membrane  **b**Transpiration types, mechanism of opening and closing of stomata,  **c**Thallus organization in algae  **d**Gel filtration, ion exchange and affinity chromatography and HPLC |
| Week 6 | 26-08-2019 to 31-08-2019 | **a**Physical structure of chromosome; Gaint chromosome: polytene and lampbrush chromosome  **b**Mechanism of transpiration, factors affecting transpiration, antitranspirants.  **c**Reproduction (vegetative, sexual and asexual)  **d**Electrophoresis and isoelectric focusing. |
| Week 7 | 02-09-2019 to 07-09-2019 | **a**Chromosome alterations and their importance  **b**Mineral Nutrition, hydroponics and its importance; essential macro and micro elements; essentiality criteria  **c**Silent features: cell structure, thallus organization, reproduction of Cyanophyta  **d**Principles and practice of statistical methods in biological research samples and population, basic statistic |
| Week 8 | 09-09-2019 to 14-09-2019 | **a**Variation in chromosome number  **b**Deficiency symptoms and their roles  **c**Xanthophyta  **d** Measures of central tendency and dispersion, Average statistics of dispersion |
| Week 9 | 16-09-2019 to 21-09-2019 | **a**Introduction and their importance  **b**Mineral uptake and Mechanism of mineral uptake  **c**Chlorophyta  **d** Coefficient of variations, standard error and confidence interval |
| Week 10 | 23-09-2019 to 28-09-2019  (Youth Festival 24-09-2019 to 27-09-2019) | **a**Cell division: mitosis  **b**Nitrogen metabolism, biological nitrogen fixation,  **c**Bacillariophyta and Dinophyta  **d**Probability distribution |
| Week 11 | 30-09-2019 to 05-10-2019 | **a**Meiosis in plant and their significance  **b, c, d** Revision |
| Mid Semester Exams | | |
| Week 12 | 16-10-2019 to 19-10-2019 | **a**Synaptonemal complex and DNA structure  **b**Importance of nitrate reductase and its regulation, ammonia assimilation,  **c**Phaeophyta  **d**Test of statistical significance |
| Week 13 | 21-10-2019 to 26-10-2019 | **a**Nucleosome and types of DNA  **b**Lipid metabolism; structure and function of lipids, β oxidation, saturated and unsaturated fatty acids.  **c**Rhodophyta  **d**Analysis of variance |
| Week 14 | 29-10-2019 to 02-11-2019 | **a**Replication of DNA  **b**Proteins, Classification, role and structure of proteins.  **c**Cryptophyta  **d**Coefficient of correlation, simple and multiple regression |
| Week 15 | 04-11-2019 to 09-11-2019 | **a**Structure and function of gene and genetic code  **b**Basics of Enzymology, Discovery and nomenclature; classification, structure, properties  **c**Current concept and relationships of protochlorophycean algae  **d**Spectrophotometery |
| Week 16 | 11-11-2019 to 16-11-2019 | **a**RNA structure and its types  **b**Factors affecting its activity, mechanism of enzyme action.  **c**Rhythms and bioluminescence in dinoflagellates  **d**Colorimetery |
| Week 17 | 18-11-2019 to 23-11-2019 | **a**Transcription and translation  **b**Revision  **c**Economic importance of algae and algae in Biotechnology  **d**Centrifugation |
| Week 18 | 25-11-2019 to 30-11-2019 | **a**Regulation of gene expression in prokaryotes and eukaryotes  **b, c, d**Revision |