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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. BTH- Sem III Name of the Teacher:Dr Rachana Rana**

**Subject:Plant Tissue Culture Period :IV(1-3), III (4), II(6), VII(1)**

**Paper : Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Cellular totipotency and differentiation in plants. |
| Week 2 | 16-08-2022 to 20-08-2022 | Plant Culture Media and their composition. |
| Week 3 | 22-08-2022 to 27-08-2022 | Micropropagation: Establishment of aseptic culture, various stages, advantages and disadvantages. |
| Week 4 | 29-08-2022 to 03-09-2022 | Sterilization techniques for glassware and tissue culture media. |
| Week 5 | 05-09-2022 to 10-09-2022 | Protoplast and somatic hybridization: Isolation, culture and plant regeneration, |
| Week 6 | 12-09-2022 to 17-09-2022 | Protoplast fusion, Identification and characterization of somatic hybrids, |
| Week 7 | 19-09-2022 to 24-09-2022 | Cybrids applications of protoplast hybridization technology. |
| Week 8 | 26-09-2022 to 01-10-2022 | Organogenesis; somatic embryogenesis; Synthetic seeds |
| Week 9 | 03-10-2022 to 08-10-2022 | Somaclonal variation, its genetic basis and  application in crop improvement. Cell/callus line selection for resistance to herbicide, stress and diseases. |
| Week 10 | 10-10-2022 to 15-10-2022 | Role of tissue culture in rapid clonal propagation, production of pathogen - free plants and "Virus Indexing" |
| Week 11 | 17-10-2022 to 22-10-2022 | Anther and Ovary Culture; |
| Week 12 | 25-10-2022 to 27-10-2022 | Haploid and Triploid plant production & their application. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Secondary metabolites: Secondary Plant products from cultured cells and their industrial applications. |
| Week 14 | 07-11-2022 to 12-11-2022 | Cryopreservation of germplasm: Short term and long term conservation of plant genetic resources, |
| Week 15 | 14-11-2022 to 19-11-2022 | In situ and Ex situ conservation of plants |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. BTH- Sem IV Name of the Teacher:Dr Rachana Rana**

**Subject:Environment Biotechnology Period :II(4,5), III (6), V(4,5,6)**

**Paper : Room No : 128**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Water pollution and its management: Measurement of water, pollution, sources of water pollution. |
| Week 2 | 16-08-2022 to 20-08-2022 | General strategies for wastewaters treatment. |
| Week 3 | 22-08-2022 to 27-08-2022 | Microbiology of waste water treatment, aerobic processes, activated sludge, oxidation ponds, trickling filters |
| Week 4 | 29-08-2022 to 03-09-2022 | Anaerobic processes: Anaerobic digesters, upward flow anaerobic sludge blanket reactors. |
| Week 5 | 05-09-2022 to 10-09-2022 | Basics of Environment and Environmental pollution, air, water, soil and noise. Air – Types, Sources & Effects, |
| Week 6 | 12-09-2022 to 17-09-2022 | Soil - soil pollutants (fertilizers, insecticides fungicides, pesticides). |
| Week 7 | 19-09-2022 to 24-09-2022 | Noise pollution, its control and impact on human health. |
| Week 8 | 26-09-2022 to 01-10-2022 | Renewable and Non Renewable energy resources and their Environmental Impacts. |
| Week 9 | 03-10-2022 to 08-10-2022 | Modern Fuels (gasohol, hydrogen and solar energy) and their Environmental Impacts. |
| Week 10 | 10-10-2022 to 15-10-2022 | Integrated Pest management, Biodegradation of environmental pollutants: pesticides, hydrocarbons, Azo dye. |
| Week 11 | 17-10-2022 to 22-10-2022 | Biofertilizers for clean environment– Nitrogen fixing microorganism, |
| Week 12 | 25-10-2022 to 27-10-2022 | Enrichment of the soil with assimilable nitrogen |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Introduction to solid waste and municipal solid waste management: Sources, types, composition.  Land fills, |
| Week 14 | 07-11-2022 to 12-11-2022 | Composition, Land fills, |
| Week 15 | 14-11-2022 to 19-11-2022 | Treatment methods (Composting, Vermicomposting) |
| Week 16 | 21-11-2022 to 25-11-2022 | Bioindicators for detection of pollution |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc. BTE- I SEM**   **Name of the Teacher: Dr. Rachana Rana**

**Subject: Introduction to biotechnology Period :III (1-3)**

**Paper : Room No : 219**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | General Introduction: Origin and Definition of Biotechnology, History from Biology to  Biotechnology.  Scope and importance: |
| Week 2 | 22-08-2022 to 27-08-2022 | Emergence of Modern Biotechnology and its promises in  agriculture, medicine and environmental sciences, Red, white, Green and Blue  biotechnology. |
| Week 3 | 29-08-2022 to 03-09-2022 | Biotechnology in India: Various Centres of Biotechnology in India, their objectives and  achievement. |
| Week 4 | 05-09-2022 to 10-09-2022 | Regulatory issues in Biotechnology: Biosafety in developed & developing countries; |
| Week 5 | 12-09-2022 to 17-09-2022 | Biosafety levels, Protocols, Benefits and Risks, Risk assessment and regulatory mechanism. |
| Week 6 | 19-09-2022 to 24-09-2022 | Good Laboratory Practices. |
| Week 7 | 26-09-2022 to 01-10-2022 | Structure and function of cell: The basic unit of life.  Prokaryotic and Eukaryotic cells. |
| Week 8 | 03-10-2022 to 08-10-2022 | Organisms used as model systems in biotechnology: E.coli, Saccharomyces cerevisiae, |
| Week 9 | 10-10-2022 to 15-10-2022 | Drosophila melanogaster, Coenorhabditis elegans, Mus musculus, Arabidopsis thaliana. |
| Week 10 | 17-10-2022 to 22-10-2022 | Role of viruses and bacteriophages in biotechnology. |
| Week 11 | 25-10-2022 to 27-10-2022 | Fundamentals of recombinant DNA TECHNOLOGY |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Fundamentals of recombinant DNA Technology: Definition, Basic concept and use of vectors, |
| Week 14 | 07-11-2022 to 12-11-2022 | restriction enzyme and ligases. |
| Week 15 | 14-11-2022 to 19-11-2022 | Sterilization techniques used in Biotechnology, |
| Week 16 | 21-11-2022 to 26-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: BSc BTH-3rd Year Name of the Teacher: Dr Vikas Sharma**

**Subject: Bioinformatics Period :1st (1,3,4) 2nd (1-3)**

**Paper : Bioinformatics Room No : Bioinformatics Lab**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Intro to Bioinformatics, Bioinformatics Databases |
| Week 2 | 22-08-2022 to 27-08-2022 | SCOP, CATH databases |
| Week 3 | 29-08-2022 to 03-09-2022 | Local & global Alignment Algorithms |
| Week 4 | 05-09-2022 to 10-09-2022 | Blast types, Algorithm, Result Interpretation |
| Week 5 | 12-09-2022 to 17-09-2022 | Multiple Sequence Alignment |
| Week 6 | 19-09-2022 to 24-09-2022 | Genome Annotation |
| Week 7 | 26-09-2022 to 01-10-2022 | Phylogenetic Analysis, tree topologies |
| Week 8 | 03-10-2022 to 08-10-2022 | Rasmol |
| Week 9 | 10-10-2022 to 15-10-2022 | Dot Plot |
| Week 10 | 17-10-2022 to 22-10-2022 | Swissprot/TrEMBL |
| Week 11 | 25-10-2022 to 27-10-2022 | PDB |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | PAM & BLOSUM |
| Week 14 | 07-11-2022 to 12-11-2022 | Methods of Gene Identification |
| Week 15 | 14-11-2022 to 19-11-2022 | Genbank & EMBL |
| Week 16 | 21-11-2022 to 26-11-2022 | PFam |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class:** B.Sc. Biotech (Hons.) 2nd year (3rd Semester)

**Name of the Teacher: Dr. Sunita Kumari**

**Subject:** Animal Cell Culture

**Period : I (5-6), IV(4,6), VII(3,6)**

**Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | History of development of cell cultures, |
| Week 2 | 16-08-2022 to 20-08-2022 | the natural surroundings for animal cells,  stimulating natural conditions for animal cells metabolic capabilities of animal cells, |
| Week 3 | 22-08-2022 to 27-08-2022 | Biology of cultured cells : The culture environment, cell adhesion, proliferation, differentiation, signaling, evolution of cell lines, Equipments and materials for animal cell culture technology |
| Week 4 | 29-08-2022 to 03-09-2022 | Introduction to the balanced salt solutions and simple growth medium. Brief discussion on the  chemical, physical and metabolic functions of different constituents of culture medium |
| Week 5 | 05-09-2022 to 10-09-2022 | Role of carbon dioxide. Role of serum and supplements. Serum & protein free defined media and their application |
| Week 6 | 12-09-2022 to 17-09-2022 | Animal cell culture Techniques: Dispersion and disruption of tissues; primary cultures,  anchorage and non-anchorage dependent cells |
| Week 7 | 19-09-2022 to 24-09-2022 | secondary culture, transformed animal cells, |
| Week 8 | 26-09-2022 to 01-10-2022 | Established/continuous cell lines, commonly used animal cell lines, their origin and  characteristics |
| Week 9 | 03-10-2022 to 08-10-2022 | Maintenance and growth kinetics of cells in culture, differentiation of cells |
| Week 10 | 10-10-2022 to 15-10-2022 | Measurement of growth and viability of cells in culture. |
| Week 11 | 17-10-2022 to 22-10-2022 | Cytotoxicity assays & their applications |
| Week 12 | 25-10-2022 to 27-10-2022 | Characterization of Cell lines and their authentication |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Cell fusion and production of monoclonal antibodies |
| Week 14 | 07-11-2022 to 12-11-2022 | Transformation and immortalization |
| Week 15 | 14-11-2022 to 19-11-2022 | cryopreservation |
| Week 16 | 21-11-2022 to 25-11-2022 | Bio-Safety & Bioethics |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class:** B.Sc. Biotech (Hons.) 2nd year (3rd Semester)

**Name of the Teacher: Dr. Sunita Kumari**

**Subject:** Immunology-I

**Period: II(1-5),VI(2)**

**Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | **Introduction**  i) Overviews of immune system – Historical perspectives |
| Week 2 | 16-08-2022 to 20-08-2022 | Clonal nature of immune response.  **Cells of the immune system:** Hematopoiesis and differentiation |
| Week 3 | 22-08-2022 to 27-08-2022 | Lymphocyte trafficking, B-lymphocytes, T-lymphocytes, macrophages, dendritic cells, Natural killer cells and lymphocyte activated killer cells, eosinophils, neutrophils & mast cells |
| Week 4 | 29-08-2022 to 03-09-2022 | **Organs of the immune system:** Primary and secondary lymphoid organs, |
| Week 5 | 05-09-2022 to 10-09-2022 | Systemic function of immune system  **Antigen** – Immunogenicity Vs. antigenicity, factors effecting immunogenicity, nature  of immunogen, |
| Week 6 | 12-09-2022 to 17-09-2022 | epitopes, heptans and antigenicity, pattern recognition receptors |
| Week 7 | 19-09-2022 to 24-09-2022 | B Cell Activation, Differentiation: B-Cell Activation and Proliferation, In Vivo Sites for Induction of Humoral Responses, T-dependent and T-independent antigens |
| Week 8 | 26-09-2022 to 01-10-2022 | Immunoglobulins: Structure of antibody, antibody effector function, |
| Week 9 | 03-10-2022 to 08-10-2022 | antibody classes and biological activities, antigenic determinants on Immunoglobulins, |
| Week 10 | 10-10-2022 to 15-10-2022 | Immunoglobulins superfamilies, generation of antibody diversity |
| Week 11 | 17-10-2022 to 22-10-2022 | generation of antibody diversity, Major histocompatibility complex: General organization and inheritance, MHC molecules and genes |
| Week 12 | 25-10-2022 to 27-10-2022 | genetic map, cellular distribution, |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | regulation of MHC expression and disease susceptibility |
| Week 14 | 07-11-2022 to 12-11-2022 | T-Cell Maturation, Activation, and Differentiation: T-Cell Receptors: Structure and Roles, T- Cell Receptor Complex, |
| Week 15 | 14-11-2022 to 19-11-2022 | Thymic Selection of the T-Cell Repertoire, TH-Cell Activation, T-Cell Differentiation |
| Week 16 | 21-11-2022 to 25-11-2022 | Cell Death and T-Cell populations, Peripheral-T-Cells. |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class:** B.Sc. Biotech (Elective) 2nd year (3rd Semester)

**Name of the Teacher: Dr. Sunita Kumari**

**Subject: Introduction to Genetic Engineering and Immunotechnology**

**Period : 4th (1-3)**

**Room No : 102**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Immunotechnology  Basic Immunology |
| Week 2 | 16-08-2022 to 20-08-2022 | Types of immunity – innate, acquired, active and passive cells |
| Week 3 | 22-08-2022 to 27-08-2022 | Cells and tissues of immune system: Lymphoid cells, mononuclear cells |
| Week 4 | 29-08-2022 to 03-09-2022 | Lymphoid organs. |
| Week 5 | 05-09-2022 to 10-09-2022 | Antigen:- Immunogenicity, chemical composition, immunogen dosage |
| Week 6 | 12-09-2022 to 17-09-2022 | Haptens, adjuvants |
| Week 7 | 19-09-2022 to 24-09-2022 | Antibody structure, Antibody structure, function and types |
| Week 8 | 26-09-2022 to 01-10-2022 | Antibody diversity, Ig Domains |
| Week 9 | 03-10-2022 to 08-10-2022 | Ag-Ab interactions – Cross reactions |
| Week 10 | 10-10-2022 to 15-10-2022 | Precipitation and agglutination. |
| Week 11 | 17-10-2022 to 22-10-2022 | Immunological Techniques: Immunodiffusion, Immunoelectrophoresis |
| Week 12 | 25-10-2022 to 27-10-2022 | Major Histo-compatibility complex (MHC), MHC restriction, regulation |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Antigen presentation and processing antigen presenting cells, |
| Week 14 | 07-11-2022 to 12-11-2022 | Antigen presentation and processing antigen presenting cells, |
| Week 15 | 14-11-2022 to 19-11-2022 | Cell mediated subset of T-cells, Cytotoxic helper and suppressor cells. |
| Week 16 | 21-11-2022 to 25-11-2022 | Cell mediated and humoral immunity, antibody dependent cell mediated cytotoxicity, Natural killer cells. |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Biotech. (Elective) V-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Plant & Animal Biotechnology**

**Period: 2nd Lecture (1-3) & 5th Lecture (4-6)**

**Paper: Room No: 303 & 223**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Introduction & History of Plant tissue culture |
| Week 2 | 16-08-2022 to 20-08-2022 | Plant Growth Regulators & applications |
| Week 3 | 22-08-2022 to 27-08-2022 | Introduction to *in vitro* methods : Micropropagation-somatic embryogenesis & organogenesis, |
| Week 4 | 29-08-2022 to 03-09-2022 | Introduction to *in vitro* methods : Micropropagation-somatic embryogenesis & organogenesis, |
| Week 5 | 05-09-2022 to 10-09-2022 | Introduction to *in vitro* methods : Micropropagation-somatic embryogenesis & organogenesis, |
| Week 6 | 12-09-2022 to 17-09-2022 | Protoplast isolation, methods, testing their viability & regeneration |
| Week 7 | 19-09-2022 to 24-09-2022 | Various methods of fusion: somatic hybridization & their applications. |
| Week 8 | 26-09-2022 to 01-10-2022 | Direct and indirect transformation of plants. Tumor formation in plant using Agrobacterium tumefaciens. Mechanism of T-DNA transfer to plants, plasmid vectors for plant transformation. |
| Week 9 | 03-10-2022 to 08-10-2022 | Genetic manipulation of plants for virus resistance, pest resistance, herbicide tolerance, resistance to fungi and bacteria. |
| Week 10 | 10-10-2022 to 15-10-2022 | Introduction to animal cell cultures. Requirement (laboratory equipment, media etc. primary and secondary culture cell lines). Anchorage dependence and contact inhibition. |
| Week 11 | 17-10-2022 to 22-10-2022 | Introduction to animal cell cultures. Requirement (laboratory equipment, media etc. primary and secondary culture cell lines). Anchorage dependence and contact inhibition. |
| Week 12 | 25-10-2022 to 27-10-2022 | Contamination & remedial measures. Monolayer and suspension cultures. Cryopreservation and germplasm storage. Establishment of gene banks. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Cytodifferentation culturing of differentiation cells and retention of properties. Large scale production of animal cell in culture. |
| Week 14 | 07-11-2022 to 12-11-2022 | Transformation of animal cells. Transgenesis, applications of transgenic animal, Biofarming. |
| Week 15 | 14-11-2022 to 19-11-2022 | Stem cells : their applications in biology & medicine cloning : Procedure, applications & problems. |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Bioinfo. (Elective) III-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Fundamentals of Molecular Biology-I**

**Period: 4th Lecture (2-3)**

**Paper: Room No: 304**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Structure of prokaryotic and eukaryotic genes. |
| Week 2 | 16-08-2022 to 20-08-2022 | Structure of prokaryotic and eukaryotic genes. |
| Week 3 | 22-08-2022 to 27-08-2022 | Structure of prokaryotic and eukaryotic genes. |
| Week 4 | 29-08-2022 to 03-09-2022 | DNA replication: Both prokaryotes and eukaryotes Properties of DNA polymerases, Synthesis of Leading and lagging strands |
| Week 5 | 05-09-2022 to 10-09-2022 | DNA replication: Both prokaryotes and eukaryotes Properties of DNA polymerases, Synthesis of Leading and lagging strands |
| Week 6 | 12-09-2022 to 17-09-2022 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 7 | 19-09-2022 to 24-09-2022 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 8 | 26-09-2022 to 01-10-2022 | DNA Repair: Photo-reactivation, excision repair, post replication repair, SOS repair. |
| Week 9 | 03-10-2022 to 08-10-2022 | **Transcription** RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription, |
| Week 10 | 10-10-2022 to 15-10-2022 | **Transcription** RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription, |
| Week 11 | 17-10-2022 to 22-10-2022 | **Transcription** RNA polymerase in prokaryotes – its molecular composition, role of each component of RNA polymerase, mechanism of transcription |
| Week 12 | 25-10-2022 to 27-10-2022 | **Gene Expression** Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression Eukaryotic gene expression and transcription factors |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | **Gene Expression** Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression Eukaryotic gene expression and transcription factors |
| Week 14 | 07-11-2022 to 12-11-2022 | **Gene Expression** Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression Eukaryotic gene expression and transcription factors |
| Week 15 | 14-11-2022 to 19-11-2022 | **Gene Expression** Prokaryotic gene expression. *Lac*, *His*, *Trp* operons. Catabolite repression Eukaryotic gene expression and transcription factors |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Micro. (Elective) III-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Introduction to Medical Microbiology-I**

**Period: 3rd Lecture (Thursday)**

**Paper: Room No: 105**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Microbial adherence, Active penetration into body, |
| Week 2 | 16-08-2022 to 20-08-2022 | Microbial adherence, Active penetration into body, |
| Week 3 | 22-08-2022 to 27-08-2022 | Passive penetration into body, Microbial production of enzymes in the body |
| Week 4 | 29-08-2022 to 03-09-2022 | Passive penetration into body, Microbial production of enzymes in the body |
| Week 5 | 05-09-2022 to 10-09-2022 | Development of chemotherapy |
| Week 6 | 12-09-2022 to 17-09-2022 | General characteristics of antimicrobial drugs |
| Week 7 | 19-09-2022 to 24-09-2022 | Determining level of antimicrobial activity |
| Week 8 | 26-09-2022 to 01-10-2022 | Mechanism of action of antimicrobial drugs, Factors influencing the effectiveness of antimicrobial drugs. |
| Week 9 | 03-10-2022 to 08-10-2022 | Mechanism of action of antimicrobial drugs, Factors influencing the effectiveness of antimicrobial drugs. |
| Week 10 | 10-10-2022 to 15-10-2022 | Mechanism of action of antimicrobial drugs, Factors influencing the effectiveness of antimicrobial drugs. |
| Week 11 | 17-10-2022 to 22-10-2022 | Mechanism of action of antimicrobial drugs, Factors influencing the effectiveness of antimicrobial drugs. |
| Week 12 | 25-10-2022 to 27-10-2022 | Mechanism of action of antimicrobial drugs, Factors influencing the effectiveness of antimicrobial drugs. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 14 | 07-11-2022 to 12-11-2022 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 15 | 14-11-2022 to 19-11-2022 | Nomenclature and classification of microbes of medical importance, criteria of classification |
| Week 16 | 21-11-2022 to 25-11-2022 | Nomenclature and classification of microbes of medical importance, criteria of classification |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Biotech. (Hons.) V-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Enzymology**

**Period: 6th Lecture (Tuesday)**

**Paper: Room No: 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Immobilized enzymes, industrial applications of immobilized enzymes, |
| Week 2 | 16-08-2022 to 20-08-2022 | Immobilized enzymes, industrial applications of immobilized enzymes |
| Week 3 | 22-08-2022 to 27-08-2022 | Immobilized enzymes, industrial applications of immobilized enzymes |
| Week 4 | 29-08-2022 to 03-09-2022 | Thermophilic enzymes, amylases, lipases |
| Week 5 | 05-09-2022 to 10-09-2022 | Thermophilic enzymes, amylases, lipases |
| Week 6 | 12-09-2022 to 17-09-2022 | Proteolytic enzymes in meat and leather industry, enzymes used in fermentation processes |
| Week 7 | 19-09-2022 to 24-09-2022 | Proteolytic enzymes in meat and leather industry, enzymes used in fermentation processes |
| Week 8 | 26-09-2022 to 01-10-2022 | Proteolytic enzymes in meat and leather industry, enzymes used in fermentation processes |
| Week 9 | 03-10-2022 to 08-10-2022 | cellulose degrading enzymes, Metal degrading enzymes. |
| Week 10 | 10-10-2022 to 15-10-2022 | cellulose degrading enzymes, Metal degrading enzymes. |
| Week 11 | 17-10-2022 to 22-10-2022 | cellulose degrading enzymes, Metal degrading enzymes. |
| Week 12 | 25-10-2022 to 27-10-2022 | cellulose degrading enzymes, Metal degrading enzymes. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Enzymes as thrombolytic agents, Anti-inflammatory agents, Isoenzymes |
| Week 14 | 07-11-2022 to 12-11-2022 | Enzymes as thrombolytic agents, Anti-inflammatory agents, Isoenzymes |
| Week 15 | 14-11-2022 to 19-11-2022 | Enzymes as thrombolytic agents, Anti-inflammatory agents, Isoenzymes |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc. Bioinfo. (Elective) I-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Cell Biology & Biochemistry**

**Period: 3rd Lecture (2-3)**

**Paper: Room No: 304**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | **Basic Cell Biology:** Cell as a basic unit of living systems: The cell theory, Precellular evolution: artificial creation of “cells”. |
| Week 2 | 22-08-2022 to 27-08-2022 | Introduction for structure and function of cell organelles: Ultra structure of cell membrane, cytosol, |
| Week 3 | 29-08-2022 to 03-09-2022 | golgi bodies, endoplasmic reticulum ( rough and smooth), ribosomes, cytoskeletal structures ( actin, microtubules etc.), |
| Week 4 | 05-09-2022 to 10-09-2022 | mitochondria, chloroplasts, lysosomes, peroxisomes, vacuoles. |
| Week 5 | 12-09-2022 to 17-09-2022 | Nucleus, nuclear membrane, nucleoplasm, nucleolus, chromatin, |
| Week 6 | 19-09-2022 to 24-09-2022 | Cell motility ( amoeboid,flagellar, and ciliar) |
| Week 7 | 26-09-2022 to 01-10-2022 | Cell senescence and death. Cell division and cell cycle. |
| Week 8 | 03-10-2022 to 08-10-2022 | **Basic Biochemistry:** General properties of organic and inorganic compounds. Solubility of organic compoundsfor generation of structure, storage of energy and information. |
| Week 9 | 10-10-2022 to 15-10-2022 | Structure and functions of Biomolecules Carbohydrates |
| Week 10 | 17-10-2022 to 22-10-2022 | Proteins, Lipids, Nucleic Acids |
| Week 11 | 25-10-2022 to 27-10-2022 | Enzymes- Classification, Nomenclature, general properties |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 12 | 5-11-2022 | Regulation of enzyme activity, steady state kinetics |
| Week 13 | 07-11-2022 to 12-11-2022 | Applications in industries – Enzymes in food processing, medicine, diagnostics and production of new compounds. |
| Week 14 | 14-11-2022 to 19-11-2022 | Enzymes as research tools – ELISA methods, enzymes. |
| Week 15 | 21-11-2022 to 26-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc. Micro. (Elective) I-Semester**

**Name of the Teacher: SUMIT DABHI**

**Subject: Fundamentals of Microbiology-I**

**Period: 3rd Lecture (Thursday)**

**Paper: Room No: 105**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Morphology and fine structure of bacteria |
| Week 2 | 22-08-2022 to 27-08-2022 | Morphology and fine structure of bacteria |
| Week 3 | 29-08-2022 to 03-09-2022 | Morphology and fine structure of bacteria |
| Week 4 | 05-09-2022 to 10-09-2022 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 5 | 12-09-2022 to 17-09-2022 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 6 | 19-09-2022 to 24-09-2022 | Organization of cell wall, cell membrane, flagella and capsules in bacteria. |
| Week 7 | 26-09-2022 to 01-10-2022 | Morphogenesis in bacteria, formation of spores and cysts. |
| Week 8 | 03-10-2022 to 08-10-2022 | Morphogenesis in bacteria, formation of spores and cysts. |
| Week 9 | 10-10-2022 to 15-10-2022 | fungi, actinomycetes and algae. |
| Week 10 | 17-10-2022 to 22-10-2022 | fungi, actinomycetes and algae. |
| Week 11 | 25-10-2022 to 27-10-2022 | fungi, actinomycetes and algae. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 12 | 5-11-2022 | Nitrogen fixation: Symbiotic and nonsymbiotic |
| Week 13 | 07-11-2022 to 12-11-2022 | Nitrogen fixation: Symbiotic and nonsymbiotic |
| Week 14 | 14-11-2022 to 19-11-2022 | Biofertilizers. Biopesticides. |
| Week 15 | 21-11-2022 to 26-11-2022 | Biofertilizers. Biopesticides. |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: BTH 1 Sem**   **Name of the Teacher: Dr Ruchi**

**Subject: Intro to BT Period : 2nd**

**Paper : Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | Structure and function of the cell: the basic unit of life |
| Week 2 | 22-08-2022 to 27-08-2022 | Structure and function of the cell: the basic unit of life, Prokaryotic and Eukaryotic cells |
| Week 3 | 29-08-2022 to 03-09-2022 | Biomolecules in a cell (proteins) |
| Week 4 | 05-09-2022 to 10-09-2022 | Introduction to basic techniques like sterilization, centrifugation |
| Week 5 | 12-09-2022 to 17-09-2022 | Sonication, |
| Week 6 | 19-09-2022 to 24-09-2022 | Basics of Biotechnology in fermentation processes |
| Week 7 | 26-09-2022 to 01-10-2022 | Green technology to control pollution |
| Week 8 | 03-10-2022 to 08-10-2022 | Biotechnology and society: genetically modified organisms (GMOs) - transgenic plants and animals and their applications in biotechnology. |
| Week 9 | 10-10-2022 to 15-10-2022 | Role of biotechnology in diagnostics, Ethical, social and legal implications of biotechnology |
| Week 10 | 17-10-2022 to 22-10-2022 | Public concerns and risks associated with genetic engineering: Bioterrorism and biowarfare |
| Week 11 | 25-10-2022 to 27-10-2022 | introduction to gene therapy |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Applications of biotechnology: today and tomorrow |
| Week 14 | 07-11-2022 to 12-11-2022 | Electrophoresis and chromatography |
| Week 15 | 14-11-2022 to 19-11-2022 | Revision |
| Week 16 | 21-11-2022 to 26-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: Biotech (H) 1 Sem**   **Name of the Teacher: Dr Ruchi**

**Subject: Intro to Biotech Period : 3**

**Paper : Room No : 110**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Carbohydrate metabolism: Biosynthesis and degradation of glucose |
| Week 2 | 16-08-2022 to 20-08-2022 | feeder pathways of glycolysis; Kreb cycle, amphibolic nature of the Kreb cycle; regulation of Kreb cycle, |
| Week 3 | 22-08-2022 to 27-08-2022 | regulation of gluconegenesis. Glycogen metabolism. |
| Week 4 | 29-08-2022 to 03-09-2022 | Mitochondrial electron transport chain |
| Week 5 | 05-09-2022 to 10-09-2022 | oxidative phosphorylation; regulation of ATP synthesis |
| Week 6 | 12-09-2022 to 17-09-2022 | Lipid Metabolism: Biosynthesis and degradation of fatty acids; β-oxidation of saturated, unsaturated and polyunsaturated fatty acids. |
| Week 7 | 19-09-2022 to 24-09-2022 | Formation of ketone bodies, their function and physiological significance. Fatty acid synthesis |
| Week 8 | 26-09-2022 to 01-10-2022 | multifunctional enzyme complex in eukaryotes, function of citrate. Regulation of fatty acid metabolism. |
| Week 9 | 03-10-2022 to 08-10-2022 | Cholesterol metabolism: Biosynthesis of cholesterol and its regulation. |
| Week 10 | 10-10-2022 to 15-10-2022 | Nucleic acid metabolism: Biosynthesis of purine and pyrimidine nucleotides; salvage reactions. |
| Week 11 | 17-10-2022 to 22-10-2022 | Catabolism of purines and pyrimidines, urea cycle. |
| Week 12 | 25-10-2022 to 27-10-2022 | Amino acid metabolism: Biosynthesis of nutritionally non-essential amino acids; catabolism of carbon skeleton of amino acids. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Conversion of amino acids to specialized products; amino acids as precursors of porphyrins, bile pigments and biogenic amines. |
| Week 14 | 07-11-2022 to 12-11-2022 | Metabolism: Metabolic pathways, biochemical reaction mechanism, energy rich metabolites. Regulation and evolution of metabolic pathways. |
| Week 15 | 14-11-2022 to 19-11-2022 | Coupled reactions, substrate level phosphorylation. Importance of ATP: Structural basis of high phosphoryl transfer potential of ATP. Sources of cellular energy, activated carriers. |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: Biotech (H) 5th sem**   **Name of the Teacher: Dr Ruchi**

**Subject: Enzymology Period : 5th**

**Paper : Room No : 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Structure and functions of enzymes: Historical background and general properties of enzymes, concept of active centre, binding sites, stereo specificity and ES complex formation, activation energy |
| Week 2 | 16-08-2022 to 20-08-2022 | Evidences for enzyme-substrate complex; Lock and key, Induced fit and Transition state hypotheses |
| Week 3 | 22-08-2022 to 27-08-2022 | Coenzymes and Cofactors- Prosthetic group, coenzymes involved in different metabolic pathways |
| Week 4 | 29-08-2022 to 03-09-2022 | Factors Affecting the Enzyme Activity: Concentration, pH and temperature. Kinetics of a single substrate enzyme catalysed reaction, derivation of Michealis-Menten Equation |
| Week 5 | 05-09-2022 to 10-09-2022 | significance of Km value, Vmax, Turnover number, Kcat. Enzyme activity, international units, specific activity |
| Week 6 | 12-09-2022 to 17-09-2022 | Enzymes as thrombolytic agents, Anti-inflammatory agents, streptokinase, Isoenzymes |
| Week 7 | 19-09-2022 to 24-09-2022 | Enzyme Regulation: Feedback inhibition, Allosteric Regulation |
| Week 8 | 26-09-2022 to 01-10-2022 | Covalent Modification and Proteolytic Activation |
| Week 9 | 03-10-2022 to 08-10-2022 | Organization of enzymes in the cell, localization, enzymes in membranes. |
| Week 10 | 10-10-2022 to 15-10-2022 | Acid-base catalysis, covalent catalysis, Metal ion catalysis, multienzyme complexes |
| Week 11 | 17-10-2022 to 22-10-2022 | ribozymes, catalytic antibodies, Allosteric enzymes. |
| Week 12 | 25-10-2022 to 27-10-2022 | Thermophilic enzymes, amylases, lipases |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Applications of Enzymes: Immobilized enzymes, industrial applications of immobilized enzymes |
| Week 14 | 07-11-2022 to 12-11-2022 | cellulose degrading enzymes, Metal degrading enzymes, enzymes used in fermentation process |
| Week 15 | 14-11-2022 to 19-11-2022 | Proteolytic enzymes in meat and leather industry |
| Week 16 | 21-11-2022 to 25-11-2022 | Revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. BTH-3rd Sem**   **Name of the Teacher: Mrs Sonia Chauhan**

**Subject: Genetics Period: 2nd (1,2)**

**Paper: BIOT-302-T Room No.: 111**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Unit – I Mendelian laws of inheritance |
| Week 2 | 16-08-2022 to 20-08-2022 | Gene interactions, |
| Week 3 | 22-08-2022 to 27-08-2022 | Gene interactions, |
| Week 4 | 29-08-2022 to 03-09-2022 | Sex determination in drosophila, |
| Week 5 | 05-09-2022 to 10-09-2022 | Sex determination in plants and animals |
| Week 6 | 12-09-2022 to 17-09-2022 | Sex linked inheritance |
| Week 7 | 19-09-2022 to 24-09-2022 | Non-disjunction as a proof of chromosomal theory of inheritance |
| Week 8 | 26-09-2022 to 01-10-2022 | Extra chromosomal inheritance: mitochondrial |
| Week 9 | 03-10-2022 to 08-10-2022 | Extra chromosomal inheritance: chloroplast genetic systems |
| Week 10 | 10-10-2022 to 15-10-2022 | revision |
| Week 11 | 17-10-2022 to 22-10-2022 | Unit – IV Basic microbial genetics: Conjugation |
| Week 12 | 25-10-2022 to 27-10-2022 | transduction, |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | transformation, |
| Week 14 | 07-11-2022 to 12-11-2022 | isolation of auxotrophs, replica plating techniques |
| Week 15 | 14-11-2022 to 19-11-2022 | analysis of mutations in biochemical pathway |
| Week 16 | 21-11-2022 to 25-11-2022 | one gene – one enzyme hypothesis |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Microbiology (E)-3rd Sem Name of the Teacher: Mrs Sonia Chauhan**

**Subject: Intro to Med Microbiology-I Period : 4TH (3)**

**Paper : MIC-301- Room No : 105**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Section-A: Brief Introduction to terminologies of infectious diseases….contd |
| Week 2 | 16-08-2022 to 20-08-2022 | Contd… |
| Week 3 | 22-08-2022 to 27-08-2022 | Frequency of diseases |
| Week 4 | 29-08-2022 to 03-09-2022 | Recognition of infectious diseases |
| Week 5 | 05-09-2022 to 10-09-2022 | infectious disease cycle |
| Week 6 | 12-09-2022 to 17-09-2022 | Section B: Nomenclature |
| Week 7 | 19-09-2022 to 24-09-2022 | Classification of microbes of medical importance |
| Week 8 | 26-09-2022 to 01-10-2022 | Criteria of classification |
| Week 9 | 03-10-2022 to 08-10-2022 | Revision |
| Week 10 | 10-10-2022 to 15-10-2022 | Section D: DEVELOPMENT OF CHEMOTHERAPY |
| Week 11 | 17-10-2022 to 22-10-2022 | CONTD. |
| Week 12 | 25-10-2022 to 27-10-2022 | REVISION |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | GEN CHARACTERISTICS OF ANTIMICROBIAL DRUGS |
| Week 14 | 07-11-2022 to 12-11-2022 | ANTIMICROBIAL ACTIVITY DETERMINATION |
| Week 15 | 14-11-2022 to 19-11-2022 | MECHANISM OF ACTION OF AMD |
| Week 16 | 21-11-2022 to 25-11-2022 | FACTORS INFLUENCING EFFECTIVENESS OF AMD |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Bioinformatics (E)-5th Sem Name of the Teacher: Mrs Sonia Chauhan**

**Subject: Genetic Engineering Period : 2nd period (1-3)**

**Paper : BNE-5002 Room No : 304**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | UNIT- I DNA sequencing methods – manual & automated: Maxam and Gilbert and Sanger method |
| Week 2 | 16-08-2022 to 20-08-2022 | UNIT- I DNA sequencing methods –Chain termination method, |
| Week 3 | 22-08-2022 to 27-08-2022 | UNIT- I DNA sequencing methods –Pyrosequencing |
| Week 4 | 29-08-2022 to 03-09-2022 | Genome Sequencing methods: Sequencing strategies for human genome |
| Week 5 | 05-09-2022 to 10-09-2022 | Shotgun methods |
| Week 6 | 12-09-2022 to 17-09-2022 | Hierarchical (clone contig) method |
| Week 7 | 19-09-2022 to 24-09-2022 | Next generation sequencing techniques |
| Week 8 | 26-09-2022 to 01-10-2022 | Next generation sequencing techniques |
| Week 9 | 03-10-2022 to 08-10-2022 | revision |
| Week 10 | 10-10-2022 to 15-10-2022 | UNIT II Cloning and expression vectors: Characteristics of cloning and expression vectors, |
| Week 11 | 17-10-2022 to 22-10-2022 | plasmid, phages, and cosmid vectors, |
| Week 12 | 25-10-2022 to 27-10-2022 | multipurpose cloning vectors, shuttle vectors, |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | bacterial, yeast, plant and mammalian expression vectors. BACs and YACs. |
| Week 14 | 07-11-2022 to 12-11-2022 | Preparation of genomic libraries. |
| Week 15 | 14-11-2022 to 19-11-2022 | Preparation of cDNA libraries. |
| Week 16 | 21-11-2022 to 25-11-2022 | revision |

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

**Teaching Plan Odd Semester (For Ongoing Classes UG-PG)**

**Session (2022-2023)**

**Class: B.Sc. Microbiology(E)-5TH Sem Name of the Teacher: Mrs Sonia Chauhan**

**Subject: FOOD & INDUSTRIAL MICROBIOLOGY-I Period: 5TH (5-6)**

**Paper: MIC-502 Room No : 105**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 13-08-2022 | Section A Food as substrate for microorganisms, |
| Week 2 | 16-08-2022 to 20-08-2022 | Nutritive value of food stuffs, |
| Week 3 | 22-08-2022 to 27-08-2022 | Effect of Hydrogen ion concentration (pH), moisture requirement on food, |
| Week 4 | 29-08-2022 to 03-09-2022 | Important food borne diseases viz. Staphylococcal intoxication |
| Week 5 | 05-09-2022 to 10-09-2022 | Important food borne diseases viz. Botulism |
| Week 6 | 12-09-2022 to 17-09-2022 | Important food borne diseases viz. Salmonellosis |
| Week 7 | 19-09-2022 to 24-09-2022 | Important food borne diseases viz. Shigillosis. |
| Week 8 | 26-09-2022 to 01-10-2022 | Section B Contamination, preservation and spoilage in various foods viz. cereal and cereal products (cereal grains, flour, bread, pasta, macroni), |
| Week 9 | 03-10-2022 to 08-10-2022 | Contamination, preservation and spoilage in various foods : Sugar and sugar products (Maple, Syrup, Honey, Candy). |
| Week 10 | 10-10-2022 to 15-10-2022 | Section C Production strains, Isolation and screening techniques |
| Week 11 | 17-10-2022 to 22-10-2022 | preservation and genetic modification of Industrial microorganisms. |
| Week 12 | 25-10-2022 to 27-10-2022 | REVISION |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Section D Yeast (Baker’s) and its uses, |
| Week 14 | 07-11-2022 to 12-11-2022 | Fermentation of Beer, |
| Week 15 | 14-11-2022 to 19-11-2022 | Fermentation of Wine and Alcohol. |
| Week 16 | 21-11-2022 to 25-11-2022 | Fermentation of Alcohol |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc. BTH-I**   **Name of the Teacher: Mrs Sonia Chauhan**

**Subject: Life Sciences Period: 7th lecture (1-3, 6)**

**Paper : BIOT-103B-T Room No : 122**

|  |  |  |
| --- | --- | --- |
| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | ADMISSION |
| Week 2 | 22-08-2022 to 27-08-2022 | Unit-I An introduction to life on earth. |
| Week 3 | 29-08-2022 to 03-09-2022 | Plant Anatomy and Physiology:-  Structure of land plants |
| Week 4 | 05-09-2022 to 10-09-2022 | Vascular system of dicot and monocot plants |
| Week 5 | 12-09-2022 to 17-09-2022 | Nutrition and Transport phenomena in plants |
| Week 6 | 19-09-2022 to 24-09-2022 | Unit-III: Animal Anatomy and Physiology:-  Homeostasis and organization of animal body. |
| Week 7 | 26-09-2022 to 01-10-2022 | Circulation: Human Circulatory system, Mechanism of Circulation, Cardiac cycle |
| Week 8 | 03-10-2022 to 08-10-2022 | Respiration: Organs of respiration, mechanism of breathing, Exchange of gases |
| Week 9 | 10-10-2022 to 15-10-2022 | Unit-I An Introduction to Plant reproduction. Plant responses to the environment (Short day and Long day Plants). |
| Week 10 | 17-10-2022 to 22-10-2022 | Unit-III :The immune response in Animals: B Cells and T Cells |
| Week 11 | 25-10-2022 to 27-10-2022 | Unit-III: Nutrition and digestion: Mechanism of digestion of proteins and carbohydrates. |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Unit-II: Ecology:- Community interactions.  Ecosystems:- Definition and components. |
| Week 14 | 07-11-2022 to 12-11-2022 | Food chain and food web. Habitat.  Ecological succession, Types of succession. |
| Week 15 | 14-11-2022 to 19-11-2022 | Unit-IV: The endocrine system: Define glands, Pitutary, Pancreas, Thyroid and Parathyroid |
| Week 16 | 21-11-2022 to 26-11-2022 | Unit-IV: Action and support by the muscles and skeleton system.  Reproduction: An introduction to reproduction in animals. |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc. BTE-1yr 1st Sem Name of the Teacher: Mrs Sonia Chauhan**

**Subject: Intro to Biotechnology Period : 3rd period (4-6)**

**Paper : A Room No : 218**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | UNIT –III Basic Techniques in Biotechnology Sterilization techniques used in Biotechnology, Sonication. |
| Week 2 | 22-08-2022 to 27-08-2022 | Centrifugation: Theory, Types of centrifugation |
| Week 3 | 29-08-2022 to 03-09-2022 | Centrifugation: their application to biological systems. |
| Week 4 | 05-09-2022 to 10-09-2022 | Chromatography: Principles, TLC, |
| Week 5 | 12-09-2022 to 17-09-2022 | Gel permeation, Ion exchange |
| Week 6 | 19-09-2022 to 24-09-2022 | Electrophoresis: Principle, types |
| Week 7 | 26-09-2022 to 01-10-2022 | Electrophoresis: applications. |
| Week 8 | 03-10-2022 to 08-10-2022 | Microscopy: Principle, & working of various microscopes (bright field, phase contrast, fluorescent)….contd |
| Week 9 | 10-10-2022 to 15-10-2022 | Contd…. |
| Week 10 | 17-10-2022 to 22-10-2022 | UNIT- IV Genetically modified organisms (GMOs) - Definition, types, Applications and Ethical issues, Transgenic plants and Animals: benefits and drawbacks |
| Week 11 | 25-10-2022 to 27-10-2022 | REVISION |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Public concerns and risks associated with genetic engineering: Bioterrorism and biowarfare |
| Week 14 | 07-11-2022 to 12-11-2022 | Human Cloning and Stem cell research: concept, applications and ethical issues |
| Week 15 | 14-11-2022 to 19-11-2022 | IPR and biotechnology: Concept of Patent, Trademarks and copyrights, Patenting life forms, Importance of patents in Biotechnology. |
| Week 16 | 21-11-2022 to 26-11-2022 | REVISION |

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

**Teaching Plan Odd Semester (For Undergraduate Classes - First Year)**

**Session (2022-2023)**

**Class: B.Sc Microbiology (Elective)-I YR Name of the Teacher: Mrs Sonia Chauhan**

**Subject: MICROBIOLOGY Period: 3rd (3) 1 lec/week**

**Paper: MIC:101 Room No : 105**

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| **S. No** | **Dates** | **Topics to be covered** |
| Week 1 | 16-08-2022 to 20-08-2022 | *Section A:* History, development of Microbiology |
| Week 2 | 22-08-2022 to 27-08-2022 | scope and applications of Microbiology |
| Week 3 | 29-08-2022 to 03-09-2022 | Nature of Microbial World |
| Week 4 | 05-09-2022 to 10-09-2022 | Prokaryotes |
| Week 5 | 12-09-2022 to 17-09-2022 | eukaryotes, |
| Week 6 | 19-09-2022 to 24-09-2022 | growth pattern in microbes……contd. |
| Week 7 | 26-09-2022 to 01-10-2022 | CONTD… |
| Week 8 | 03-10-2022 to 08-10-2022 | REVISION |
| Week 9 | 10-10-2022 to 15-10-2022 | *Section D:* Microorganism Association with Vascular Plants: Rhizosphere |
| Week 10 | 17-10-2022 to 22-10-2022 | Rhizoplane microorganisms |
| Week 11 | 25-10-2022 to 27-10-2022 | Mycorrhizae |
| **Mid Semester Exam (28th October 2022 – 4th November 2022)** | | |
| Week 13 | 5-11-2022 | Nitrogen fixation: Symbiotic |
| Week 14 | 07-11-2022 to 12-11-2022 | Nitrogen fixation: nonsymbiotic |
| Week 15 | 14-11-2022 to 19-11-2022 | biofertilizers |
| Week 16 | 21-11-2022 to 26-11-2022 | Biopesticides. |