

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Ms.Sonika

Class- Biotechnology (II Sem)

Subject- General Microbiology

Paper-B23-BTY-201

February, 2024 4 th Week 19,20,21 Feb	Introduction to classification of microorganisms: Microbial taxonomy, different criteria including molecular approaches,
25 Feb, 2024	Sunday
5 th Week 26,27,28 Feb	Stains and staining procedures: Acidic, basic and neutral stains, Gram staining, Acid fast staining, Flagella staining, Endospore staining .

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Ms.Sonika

Class- - Biotechnology (II Sem)

Subject- General Microbiology

Paper- B23-BTY-201

March, 2024 2nd Week 4,5,6 March	Cultivation and Maintenance of microorganisms: Nutritional requirements of microorganisms. Methods of isolation, purification and preservation of microorganisms
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3rd Week 11,12,13 March	Microbial growth: Study of growth curve, generation time, quantitative measurement of growth and factors affecting growth of bacteria.
17 March, 2024	Sunday
4th Week 18,19,20 March	Viruses: General characteristics of viruses, difference between virus and typical microbial cell History and evolution of microbiology with special reference to the contribution of the scientists: A. V. Leeuwenhoek, Louis Pasteur, Robert Koch, Edward Jenner and Alexander Fleming
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Ms.Sonika

Class- - Biotechnology (II Sem)

Subject- General Microbiology

Paper- B23-BTY-201

April, 2024 1st Week 6 April	structure, different shapes and symmetries with one example of each type, classification of viruses on the basis of nucleic acids, phage and animal cell viruses, example of each and their importance.
7 April, 2024	Sunday
2nd Week 8,9,10 April	Control of microorganisms: By physical and chemical antimicrobial agents including antibiotics and their mode of action
11 April, 2024 14 April, 2024	Id-Ul-Fitr Sunday
3rd Week 15,16,17 April	Food and Water Microbiology: Bacterial pollutants of water, coliforms and non coliforms. Sewage composition and its disposal.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 22,23,24 April	Major food born infections and intoxications. Microbiology of fermented Foods. Microbial ecology: Microenvironment & Niche
28 April, 2024	Sunday
5th Week 29, 30 April	Soil microbiology: Types & functions of microorganisms in soil.

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Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Ms.Sonika

Class- Biotechnology (II Sem)

Subject- General Microbiology

Paper- B23-BTY-201

May, 2024 1st Week 1 May- 4 May	Brief idea of lytic cycle and lysogeny. Microbial spoilage of foods.
5 May ,2024	Sunday
2nd Week 6 ,7,8 May	Bacterial Reproduction: Transformation, Transduction and Conjugation. Endospores and sporulation in bacteria. Distribution and characterization: Prokaryotic and Eukaryotic cells, Morphology and cell structure of major groups of microorganisms eg. Bacteria, Algae, Fungi and Protozoa.
10 May, 2024 12 May, 2024	Parshuram Jayanti Sunday
3rd Week 13,14,15 May	Microbial phylogeny and current classification of bacteria. And Revision.
University Examination:- 20 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (February - May)

Name of the Teacher – Dr. Twinkle Sugla
Class- B.Sc.I Minor
Subject- Introduction of Biological Chemistry
Paper- B23-BTY-203

February, 2024 4 th Week 22 Feb	Basic constituents of matter - elements, atoms, isotopes, atomic weights atomic numbers, Avogadro number, Molarity, Molality, Normality
25 Feb, 2024	Sunday
5 th Week 29 Feb	Basics of mass spectrometry, molecules, molecular weights, structural and molecular formulae, ions and polyatomic ions, , gas constant,
March, 2024 2 nd Week 7 March	Chemical reactions, reaction stoichiometry, rates of reaction, rate constants, order of reactions
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 14 March	Arrhenious equation, Maxwell Boltzmann distributions, rate-determining steps, catalysis
17 March, 2024	Sunday
4 th Week 21 March	Free-energy, entropy and enthalpy changes during reactions; kinetic versus thermodynamic controls of a reaction
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Dr. Twinkle Sugla

Class- B.Sc.I Minor

Subject- Introduction of Biological Chemistry

Paper- B23-BTY-203

April, 2024 1st Week 4 April	Light and matter interactions (optical spectroscopy, fluorescence, bioluminescence); Chemical bonds (ionic, covalent, Van der Waals forces);
7 April, 2024	Sunday
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 18 April	States of matter - vapor pressure, surface tension, boiling and melting points, solubility, capillary action, suspensions, colloids and solutions
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 25 April	Acids, Bases and pH - Arrhenius theory, Ionic product of water, weak acids and bases, conjugate acid-base pairs, buffers
28 April, 2024	Sunday

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(February - May)

Name of the Teacher – Dr. Twinkle Sugla

Class- B.Sc.I Minor

Subject- Introduction of Biological Chemistry

Paper- B23-BTY-203

May, 2024 1st Week 2 May	Types of organic reactions (Substitution, Addition, Elimination, Rearrangement etc.). Concept of isomerism
5 May, 2024	Sunday
2nd Week 9 May	Types of isomerism, Optical isomerism, elements of symmetry, molecular chirality, enantiomers, chiral and achiral molecules
10 May, 2024 12 May, 2024	Parshuram Jayanti Sunday
3rd Week 16 May	Geometric isomerism: Configuration of geometric isomers. Cis-Trans nomenclature. Redox reactions and electrochemistry - oxidation-reduction reactions.
University Examination:- 20 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- B.Sc. II (Biotechnology)

Subject- Recombinant DNA Technology

Paper- VIII

January, 2024 1st Week 3, 4 Jan	Recombinant DNA Technology and Genetic Engineering: Introduction, history, scope and applications.
7 Jan, 2024	Sunday
2nd Week 10, 11 Jan	Tools of Recombinant DNA technology: Steps in gene cloning. Gene cloning tools – Restriction enzymes- class I, II and class III restriction enzymes, their features.
14 Jan, 2024	Sunday
3rd Week 18 Jan	Ligases, polymerases, alkaline phosphatases, kinases, transferases and other DNA engineering enzymes.
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4th Week 24, 25 Jan	Gene Cloning Vectors: Introduction, nomenclature of vectors, properties of a suitable vector. Plasmid vectors, bacteriophage, cosmids and phagemids. Properties of host. M13 vectors.
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5th Week 31 Jan	Expression vectors, shuttle vectors. Vectors for cloning in eukaryotic cells, YACs and BACs.

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- B.Sc. II (Biotechnology)

Subject- Recombinant DNA Technology

Paper- VIII

February, 2024 1st Week 1 Feb	In vitro construction of r-DNA molecules: Isolation of gene of interest and vector DNA, cohesive and blunt ends, modification of cut ends, linkers and adaptors.
4 Feb, 2024	Sunday
2nd Week 7, 8 Feb	Integration of DNA inserts into the vectors. Transformation: Techniques of introducing r-DNA into the desired host, competent cells, electroporation and microinjection. Screening and selection of transformants and their characterization
11 Feb, 2024	Sunday
3rd Week 15 Feb	Selection of clone having the specific DNA insert - immunological screening and colony hybridization.
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 21, 22 Feb	Marker genes- selectable and scorable markers. Gene Libraries: Construction of Genomic and cDNA library, advantages and limitations, screening of gene libraries.
25 Feb, 2024	Sunday
5th Week 28, 29 Feb	DNA amplification through PCR: Basic features and applications of PCR, types and modifications. Site directed mutagenesis. DNA sequencing techniques: Maxam – Gilbert’s method, Sanger’s dideoxy chain termination method, Automated DNA sequencing.

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Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma
Class- B.Sc. II (Biotechnology)
Subject- Recombinant DNA Technology
Paper- VIII

March, 2024 2 nd Week 6, 7 March	Genome Mapping: Concept and applications. Restriction enzyme digestion and restriction mapping. Southern and Northern analysis.
8 March, 2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 13, 14 March	DNA finger printing. PAGE, Western blotting, dot blots and slot blots. RFLP, RAPD (brief only), microarrays. Gene expression in prokaryotes: expression cassette. Promoters- tissue specific promoters, wound inducible promoters, strong and regulated promoters
17 March, 2024	Sunday
4 th Week 20, 21 March	Increasing protein yield-factors affecting level of recombinant protein production. Production of recombinant proteins in E. coli, translational and transcriptional fusion- advantages and disadvantages.
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- B.Sc. II (Biotechnology)

Subject- Recombinant DNA Technology

Paper- VIII

April, 2024 1st Week 3, 4 April	Applications of Recombinant DNA technology: Production of recombinant proteins of pharmaceutical importance- insulin, human growth hormone, recombinant vaccines (hepatitis B) etc.
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-Ul-Fitr Sunday
3rd Week 18 April	Transgenic plants and animals.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 24, 25 April	Revision
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. I (Biotechnology)

Subject- Animal Cell and Tissue Culture

Paper- BT-109A

January, 2024 1st Week 1, 2 Jan	Animal cell and tissues culture: Historical background, development, advantages and limitations of cell & tissue culture.
7 Jan, 2024	Sunday
2nd Week 8, 9 Jan	Requirements of cell & tissue culture: aseptic area, incubation, preparation and sterilization, storage, specialized equipment, consumable items.
14 Jan, 2024	Sunday
3rd Week 15, 16 Jan	Aseptic techniques: elements of aseptic environment, sterile handling, laminar flow, standard procedure.
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4th Week 22, 23 Jan	Culture vessels and substrates: the substrate, choice of culture vessel, treated surfaces.
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5th Week 29, 30 Jan	Defined media and supplements: physicochemical properties, balanced salt solutions.

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma
Class- M.Sc. I (Biotechnology)
Subject- Animal Cell and Tissue Culture
Paper- BT-109A

February, 2024 2 nd Week 5, 6 Feb	Complete media, role of serum and supplements.
11 Feb, 2024	Sunday
3 rd Week 12, 13 Feb	Serum free media: advantages and disadvantages of serum and serum free media
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4 th Week 19, 20 Feb	Replacement of serum, development of serum free media.
25 Feb, 2024	Sunday
5 th Week 26, 27 Feb	Primary culture: types of primary cell culture, isolation of the tissue, primary culture.

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Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. I (Biotechnology)

Subject- Animal Cell and Tissue Culture

Paper- BT-109A

March ,2024 2 nd Week 4, 5 March	Sub-culturing of animal cells: Subculture and propagation, Criteria for subculture, Subculture of monolayer cells, growth cycle and split ratio, propagation and subculture in suspension.
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 11, 12 March	Cloning and selection: dilution and suspension cloning, scaling up in suspension and monolayer, large scale production of cells using bioreactors, microcarriers and perfusion techniques.
17 March, 2024	Sunday
4 th Week 18, 19 March	Cell line characterization: need for characterization, authentication, cell morphology, chromosome content, DNA content, RNA and protein expression, enzyme activity, antigen markers.
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. I (Biotechnology)

Subject- Animal Cell and Tissue Culture

Paper- BT-109A

April, 2024 1st Week 1, 2 April	Production of high value therapeutics: enzymes, hormones, monoclonal antibody, cytokines, tissue plasminogen activators.
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-Ul-Fitr Sunday
3rd Week 15, 16 April	Applications of animal cell culture: virology, cancer research, gene therapy, drug development and cytotoxicity, animal cloning, genetic counseling, cryopreservation of cells.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 22, 23 April	Applications of animal cell culture: animal cloning, genetic counseling, cryopreservation of cells.
5th Week 29, 30 April	Revision
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. II (Biotechnology)

Subject- Environmental Biotechnology

Paper- BT-120

January, 2024 1 st Week 2, 4, 5, 6 Jan	Environmental Biotechnology : An overview, concept, scope and market Biological control of air pollution.
7 Jan, 2024	Sunday
2 nd Week 9, 11, 12, 13 Jan	Bacterial examination of water for potability. Testing of water for physiochemical parameters including BOD & COD.
14 Jan, 2024	Sunday
3 rd Week 16, 18, 19, 20 Jan	Solid waste : Sources and management (composting, wormicomposting and methane production).
17 Jan,2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4 th Week 23, 25, 27 Jan	Waste water : origin, composition and treatment. Physical, chemical and biological treatment of waste water.
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5 th Week 30 Jan	Aerobic process : activated sludge

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Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. II (Biotechnology)

Subject- Environmental Biotechnology

Paper- BT-120

February, 2024 1st Week 1, 2, 3 Feb	Aerobic processes: oxidation ponds, trickling filter towers, and rotating discs.
4 Feb, 2024	Sunday
2nd Week 6, 8, 9, 10 Feb	Anaerobic processes: anaerobic digesters, anaerobic filters and upflow sludge blanket reactors.
11 Feb, 2024	Sunday
3rd Week 13, 15, 16, 17 Feb	Microbiology and biochemistry of aerobic and anaerobic waste water treatment processes.
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 20, 22, 23, 24 Feb	Treatment of industrial effluents: distillery effluent, paper and pulp mill effluent, tannary effluent, textile dye effluent, removal of heavy metals from waste waters.
25 Feb, 2024	Sunday
5th Week 27, 29 Feb	Bioremediation : Bioremediation of fuel oils and lubricants in soil and water.

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Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. II (Biotechnology)

Subject- Environmental Biotechnology

Paper- BT-120

March, 2024 1 st Week 1, 2 March	Degradation of sulphur compounds present in coal and petroleum.
3 March, 2024	Sunday
2 nd Week 5, 7, 9 March	Microbial degradation of xenobiotics, genetic engineering of biodegradation pathways.
8 March, 2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 12, 14, 15, 16 March	Environmental Monitoring: Biosensors for environmental applications, BOD sensor, ammonia sensor, Nitrite sensor and sulphite ion sensor. Indicator organisms: Safety indicators and Quality indicators
17 March, 2024	Sunday
4 th Week 19, 21, 22 March	Microbial Insecticides : Bacteria, fungi and viruses. Use of R-DNA technology to enhance the efficacy microbial insecticides.
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma

Class- M.Sc. II (Biotechnology)

Subject- Environmental Biotechnology

Paper- BT-120

April, 2024 1st Week 2, 4, 5, 6 April	Biofertilizers, Microbes in oil recovery and bioleaching.
7 April, 2024 2nd Week 8 April – 13 April	Sunday Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 16, 18, 19, 20 April	Biodeterioration of stored plant food materials, leather, wool, metals, textiles, stone & related building.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 23, 25, 26, 27 April	Control of microbial bideterioration.
5th Week 30 April	Revision
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma+ Ms. Manpreet Kaur

Class- M.Sc. II (Biotechnology)

Subject- Animal Biotechnology

Paper- BT-121

January, 2024 1 st Week 3, 4, 5, 6 Jan	Animal Biotechnology- Scope, global perspective and new horizons, Historical perspective, and economically important livestock breeds
7 Jan, 2024	Sunday
2 nd Week 10, 11, 12, 13 Jan	Model animals in animal biotechnology and genetic engineering.
14 Jan, 2024	Sunday
3 rd Week 18, 19, 20 Jan	Somatic Cell Genetics: Production of hybrid cells, Properties of hybrids, Applications hybrid cells,
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4 th Week 24, 25, 27 Jan	Gene Transfer into Animal Cells: DNA transfer techniques into mammalian cells: calcium phosphate precipitation, DEAE-dextran procedure, polycation DMSO, microinjection, electroporation;
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5 th Week 31 Jan	Test

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Preeti Sharma+ Ms. Manpreet Kaur

Class- M.Sc. II (Biotechnology)

Subject- Animal Biotechnology

Paper- BT-121

February, 2024 1st Week 1, 2, 3 Feb	Selectable markers, viral vectors for gene transfer into mammalian cells: SV40, adenovirus, vaccinia, bovine papiloma virus, baculovirus, retrovirus
4 Feb, 2024	Sunday
2nd Week 7, 8, 9, 10 Feb	Transgenic animals: Transgenic mice: Methodology and applications; Transgenic cattle, Livestock transgenesis- production of drugs using animals TEST
11 Feb, 2024	Sunday
3rd Week 15, 16, 17 Feb	Biotechnology in livestock assisted reproduction, biodiversity and conservation: Biotechnology in conservation of livestock diversity, Superovulation, Embryo biotechnology- Embryo collection, evaluation, and transfer, IVF and <i>in vitro</i> embryo production TEST
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 21, 22, 23, 24 Feb	Biotechnology in livestock assisted reproduction, biodiversity and conservation: Biotechnology in conservation of livestock diversity, Superovulation, Embryo biotechnology- Embryo collection, evaluation, and transfer, IVF and <i>in vitro</i> embryo production TEST
25 Feb, 2024	Sunday
5th Week 28, 29 Feb	Stem cells technology in livestock

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma+ Ms. Manpreet Kaur

Class- M.Sc. II (Biotechnology)

Subject- Animal Biotechnology

Paper- BT-121

March, 2024 1 st Week 1,2 March	Biotechnology in conservation of livestock diversity, TEST + doubts clearance
3 March, 2024	Sunday
2 nd Week 6, 7, 9 March	Animal cloning: Concepts of animal cloning, Principles and techniques of cloning, Applications of animal cloning
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 13, 14, 15, 16 March	Animal genomics: crucial role for health and biomedical sciences. Models used in animal genomics TEST
17 March, 2024	Sunday
4 th Week 20, 21, 22 March	Functional genomics and livestock traits assessment TEST
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Preeti Sharma+ Ms. Manpreet Kaur

Class- M.Sc. II (Biotechnology)

Subject- Animal Biotechnology

Paper- BT-121

April, 2024 1st Week 3, 4, 5, 6 April	Livestock in the post genomic era of biology and medicine
7 April, 2024 2nd Week 8 April – 13 April	Sunday Sessional Exams
11 April, 2024 14 April, 2024 3rd Week 18, 19, 20 April	Id-UI-Fitr Sunday Economically important livestock breeds, Selectable markers
17 April, 2024 21 April, 2024 4th Week 24, 25, 26, 27 April	Ram Navmi Sunday Cryobanking of germplasm, oocytes and sperm, Somatic cell nuclear transfer, Stem cells technology in livestock TEST
5th Week 30 April	Revision
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- B.Sc.I Minor

Subject- Introduction of Biological Chemistry

Paper- B23-BTY-203

4th Week 22 Feb	Basic constituents of matter - elements, atoms, isotopes, atomic weights Atomic numbers, Avogadro number, Molarity, Molality, Normality
25 Feb, 2024	Sunday
5th Week 29 Feb	Basics of mass spectrometry, molecules, molecular weights, structural and Molecular formulae, ions and polyatomic ions, , gas constant,

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Twinkle Sugla
Class- M.Sc. I
Subject- Principles of Genetic Engineering
Paper- BT-107

January, 2024 1st Week 1 Jan - 3 Jan	Genetic Engineering: Introduction and scope of Genetic Engineering, Milestones in Genetic engineering, Central role of E.coli. Nucleic Acids Purification of total cell DNA, plasmid DNA, phage DNA, Yield Analysis, , Nucleic acid blotting and hybridization
7 Jan, 2024	Sunday
2nd Week 8 Jan - 10 Jan	Manipulation of purified DNA: DNA modifying enzymes- Terminal deoxynucleotidyl transferase, Polynucleotide kinase, Alkaline phosphatase, Nucleases, Methylases Restriction Endonucleases- Host controlled restriction and modification, Nomenclature, types, Recognition sequence, blunt and sticky ends, applications.
14 Jan, 2024	Sunday
3rd Week 15 Jan – 16 Jan	Ligases- E. coli and T4 DNA ligases, Linker, Adaptor, Homopolymer tailing Gene Cloning Vectors General features, Types of cloning vectors: Plasmid, bacteriophage
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4th Week 22 Jan - 24 Jan	Types of cloning vectors: phagemid, cosmid, artificial chromosomes (YAC, BAC, PAC)
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5th Week 29 Jan – 31 Jan	Transformation of E. coli: Concept, Selection of transformed cells, Identification of recombinants (bacteria and phages)

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Principles of Genetic Engineering

Paper- BT-107

4 Feb, 2024	Sunday
2nd Week 5 Feb - 6 Feb	Cloning of Specific: GeneDirect selection, Identification from a gene library-genomic library, cDNA synthesis and cloning
11 Feb, 2024	Sunday
3rd Week 12 Feb-13 Feb	Properties of cDNA, mRNA enrichment, cDNA library. Methods for Clone Identification Screening strategies- Colony and plaque hybridization, Abundancy probing, Heterologus probing,
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 19 Feb - 21 Feb	Immunological screening, Differential screening, Subtractive hybridization. Protein-Protein interactions-Phage display, Yeast two hybrid system, Yeast three hybrid system.
25 Feb, 2024	Sunday
5th Week 26 Feb - 28 Feb	Polymerase Chain Reaction Concept, Basic PCR reaction, Factors affecting the PCR, Types of PCR (RTPCR, Real time PCR, Allele specific PCR, Multiplex PCR) , Applications of PCR

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Lesson Plan for the Even Semester, 2024

(January – April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Principles of Genetic Engineering

Paper- BT-107

3 March, 2024	Sunday
2nd Week 4 March - 6 March	Nucleic Acid Sequencing: DNA Sequencing: Rapid DNA sequencing techniques and strategic details of range of methodologies eg. Dideoxynucleotide, Chemical degradation, Automated DNA sequencing, Thermal cycle sequencing, Pyrosequencing.
8 March, 2024 10 March, 2024	Maha Shivratri Sunday
3rd Week 11 March - 13 March	Site Directed Mutagenesis: Oligonucleotide directed mutagenesis, PCR amplified oligonucleotide directed mutagenesis, Random mutagenesis with degenerate oligonucleotide primers / nucleotide analogs.
17 March, 2024	Sunday
4th Week 18 March – 20 March	Gene expression and Regulation studies: Primer extension, S1 mapping, RNase protection assay, Gel retardation assay, Deletion analysis, Reporter genes
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Principles of Genetic Engineering

Paper- BT-107

April, 2024 1st Week 1 April- 3 April	DNA foot printing, Modification interference assays, HRT, HART Manipulation of gene expression in prokaryotes: Problems with production of recombinant proteins in E coli
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 15 April - 17 April	Optimizing expression of foreign genes in E.coli- Strong and regulatory promoters, Codon usage, Fusion proteins, Increasing protein stability and secretion, Translation expression vectors, Protease deficient host strains.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 22April - 24 April	Heterologus protein production in Eukaryotes: Saccharomyces cerevisiae and Pistia pastoris expression systems Baculovirus Insect cell expression systems Mammalian cell expression system
5th Week 29 April - 30 April	Doubt clearance, Revision
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Plant Cell & Tissue Culture

Paper- BT- 109B

January, 2024 1st Week 6 Jan	Introduction to plant cell and tissue culture and historical perspective. Laboratory organization, aseptic manipulations and culture media – composition, preparation and development.
7 Jan, 2024	Sunday
2nd Week 13 Jan	Callus culture; Initiation and maintenance of suspension culture- batch and continuous culture, assessment of growth and viability; Static techniques of single cell culture.
14 Jan, 2024	Sunday
3rd Week 20 Jan	Organogenesis, somatic embryogenesis and synthetic seeds.
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4th Week 27 Jan	Micropropagation – technique, factors affecting in vitro culture of plants (physical, chemical, genotypic and others), applications and limitations of micropropagation.
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Plant Cell & Tissue Culture

Paper- BT- 109B

February, 2024 1 st Week 3 Feb	Meristem, shoot tip culture and production of virus free plants.
4 Feb, 2024	Sunday
2 nd Week 10 Feb	Somaclonal variations, molecular basis of variation and their significance in plant breeding.
11 Feb, 2024	Sunday
3 rd Week 17 Feb	In vitro production of haploid plants – Androgenesis (anther and pollen culture)
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4 th Week 24 Feb	Gynogenesis (ovary and ovule culture).
25 Feb, 2024	Sunday
5 th Week 26 Feb - 29 Feb	No class

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Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Plant Cell & Tissue Culture

Paper- BT- 109B

March, 2024 1 st Week 2 March	Significance and uses of haploids in agriculture. Wide hybridization
3 March, 2024 2 nd Week 9 March	Sunday Embryo rescue technique.
8 March, 2024 10 March, 2024 3 rd Week 16 March	Maha Shivratri Sunday Protoplast culture and somatic hybridization – Isolation, culture
17 March, 2024 4 th Week 18 March – 22 March	Sunday No class
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Dr. Twinkle Sugla

Class- M.Sc. I

Subject- Plant Cell & Tissue Culture

Paper- BT- 109B

April, 2024 1st Week 6 April	Fusion of protoplast, selection of fusion products and plant regeneration, assessment of somatic hybrid plants
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 20 April	Production of cybrids, applications of protoplast culture and somatic hybridization in the improvement of crop plants.
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 27 April	In vitro germplasm conservation and cryopreservation.
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- B.sc II Semester-IV

Subject- Bioinformatics

Paper- Paper-IX

January, 2024 1 st Week 1,2 Jan	History, scope and importance of bioinformatics.
7 Jan, 2024 2 nd Week 8,9 Jan	Sunday Introduction to Genomics – information flow in Biology, DNA sequence data,
14 Jan, 2024 3 rd Week 15,16Jan	Sunday Functional Proteomics – protein sequence and structural data, protein information
17 Jan,2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4 th Week 22,23 Jan	Sequence data bases, NCBI model, File format
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5 th Week 29,30Jan	experimental approach to genome sequence data, genome information resources

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- B.sc II Semester-IV

Subject- - Bioinformatics

Paper- Paper-IX

4 Feb, 2024	Sunday
2nd Week 5,6 Feb	Sequence alignment and data base search – protein primary sequence analysis, algorithm .
11 Feb, 2024	Sunday
3rd Week 12,13 Feb	Resources and secondary data bases. Computational Genomics - Internet basics, biological data analysis and application
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 19,20Feb	protein data bank.
25 Feb, 2024	Sunday
5th Week 26,27Feb	PIR

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Ms.Sonika

Class- B.sc II Semester-IV

Subject- - Bioinformatics

Paper- Paper-IX

3 March, 2024	Sunday
2nd Week 4,5 March	Predictive methods using DNA and protein sequences Structural data bases – Small molecules data bases, protein information resources
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3rd Week 11,12 March	BLAST, multiple sequence alignment. DATA base searching using
17 March, 2024	Sunday
4th Week 18,19 March	BLAST and FASTA
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- B.sc II Semester-IV

Subject- - Bioinformatics

Paper- Paper-IX

April, 2024 1st Week 1,2 April	File format Types
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 15,16 April	Genome information resources
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 22,23 April	PDB Software
5th Week 29, 30 April	SDB Software
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher –Ms.Sonika

Class- M.sc Biotechnology Semester-II

Subject- Bioinformatics

Paper- BT-108

January, 2024 1 st Week 3,4,5 Jan	Bioinformatics and Biological Databases Bioinformatics: Introduction, Goal, Scope, Applications, Limitations, and New Themes
7 Jan, 2024	Sunday
2nd Week 10,11,12 Jan	Biological Databases: Introduction, Types of Databases, Biological Databases, Pitfalls of Biological Databases, Information Retrieval from Biological Databases
14 Jan, 2024	Sunday
3rd Week 17,18,19 Jan	Sequence Alignment Pairwise Sequence Alignment: Evolutionary Basis, Sequence Homology versus Sequence Similarity, Sequence Similarity versus Sequence Identity, Methods, Scoring Matrices, Statistical Significance of Sequence Alignment
17 Jan,2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4th Week 24,25,26 Jan	Database Similarity Searching: Unique Requirements of Database Searching, Heuristic Database Searching, Basic Local Alignment Search Tool (BLAST), FASTA, Comparison of FASTA and BLAST, Database Searching with the Smith– Waterman Method
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- M.sc Biotechnology Semester-II

Subject- Bioinformatics

Paper- BT-108

4 Feb, 2024	Sunday
2nd Week 7,8,9 Feb	Multiple Sequence Alignment: Scoring Function, Exhaustive algorithms, Heuristic Algorithms, Practical Issues Profiles and Hidden Markov Models: Position-Specific Scoring Matrices, Profiles, Markov Model and Hidden Markov Model
11 Feb, 2024	Sunday
3rd Week 14,15,16 Feb	Protein Motifs and Domain Prediction: Identification of Motifs and Domains in Multiple Sequence Alignment, Motif and Domain Databases Using Regular Expressions, Motif and Domain Databases Using Statistical Models, Protein Family Databases, Motif Discovery in Unaligned Sequences, Sequence Logos
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4th Week 21,22,23 Feb	Gene and Promoter Prediction Gene Prediction: Categories of Gene Prediction Programs, Gene Prediction in Prokaryotes, Gene Prediction in Eukaryotes Promoter and Regulatory Element Prediction: Promoter and Regulatory Elements in Prokaryotes, Promoter and Regulatory Elements in Eukaryotes, Prediction Algorithms
25 Feb, 2024	Sunday
5th Week 28,29 Feb	Phylogenetics Basics: Molecular Evolution and Molecular Phylogenetics, Terminology, Gene Phylogeny versus Species Phylogeny, Forms of Tree Representation, Why Finding a True Tree Is Difficult, Procedure Phylogenetic Tree Construction Methods and Programs: Distance-Based Methods, Character-Based Methods, Phylogenetic Tree Evaluation, Phylogenetic Programs

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- Bioinformatics

Subject- M.sc Biotechnology Semester-II

Paper- BT-108

3 March, 2024	Sunday
2nd Week 6,7,8 March	Structural Bioinformatics Protein Structure Basics: Amino Acids, Peptide Formation, Dihedral Angles, Hierarchy, Secondary Structures, Tertiary Structures, Determination of Protein Three-Dimensional Structure, Protein Structure Database
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3rd Week 13,14,15 March	Protein Structure Visualization, Comparison, and Classification: Protein Structural Visualization, Protein Structure Comparison, Protein Structure Classification
17 March, 2024	Sunday
4th Week 20,21,22 March	Protein Secondary Structure Prediction: Secondary Structure Prediction for Globular Proteins, Secondary Structure Prediction for Transmembrane Proteins, Coiled Coil Prediction
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms.Sonika

Class- M.sc Biotechnology Semester-II

Subject- Bioinformatics

Paper- BT-108

April, 2024 1st Week 3,4,5 April	Protein Tertiary Structure Prediction: Methods, Homology Modeling, Threading and Fold Recognition, Ab Initio Protein Structural Prediction, CASP
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 17,18,19 April	RNA Structure Prediction: Introduction, Types of RNA Structures, RNA Secondary Structure Prediction Methods, Ab Initio Approach, Comparative Approach, Performance Evaluation
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 24,25,26 April	Genome Mapping, Assembly, and Comparison: Genome Mapping, Genome Sequence Assembly, Genome Annotation, Comparative Genomics
5th Week 29 April - 30 April	Functional Genomics: Sequence-Based Approaches, Microarray-Based Approaches, Comparison of SAGE and DNA Microarrays Proteomics: Technology of Protein Expression Analysis, Posttranslational Modification, Protein Sorting, Protein–Protein Interactions
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- IIIrd Year SEMESTER VI

Subject- Microbial Biotechnology

Paper- XIII

January, 2024 1 st Week 3, 5 Jan	Microbial Biotechnology: Historical landmarks, General concept. Screening and Isolation of Micro organisms:
7 Jan, 2024	Sunday
2 nd Week 10, 12 Jan	Industrially important microbes, their screening and isolation, enrichment culture.
14 Jan, 2024	Sunday
3 rd Week 17, 19 Jan	Strain improvement- bacterial genetics, mutant selection, recombination, recombinant DNA technology. Strain preservation and maintenance
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4 th Week 24 Jan	Genetically engineered microbes: concept and technique; use of GEM in Agriculture, Industry and Medicine.
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5 th Week 31 Jan	Nutrition and cultivation of microorganisms: Basic nutrition and metabolism, Natural and Synthetic media,

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Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Ms. Manpreet Kaur
Class- IIIrd Year SEMESTER VI
Subject- Microbial Biotechnology
Paper- XIII

February, 2024 2 nd Week 7, 9 Feb	Sterilization techniques, Microbial growth kinetics. Fermentation types – Continuous, Batch fed culture, Solid state and Submerged. Quantification of growth,
11 Feb, 2024 3 rd Week 16 Feb	Sunday thermodynamics of growth, effect of different factors on growth. Fermentation concepts and types.
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4 th Week 21, 23 Feb	Microbial Fermenters/Bioreactors: Basic design of fermenters. Physico chemical standards used in bioreactors (agitation, aeration, ph, temp., dissolved oxygen etc.).
25 Feb, 2024 5 th Week 28 Feb	Sunday Types of fermenters stirred tank, bubble column, airlift etc.

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Ms. Manpreet Kaur
Class- IIIrd Year SEMESTER VI
Subject- Microbial Biotechnology
Paper- XIII

March, 2024 1 st Week 1 March	Process Development and Downstream Processing: Shake flask fermentation, scale up of the process. + TEST
3 March, 2024 2 nd Week 6 March	Sunday Downstream processing – Separation of particles, disintegration of cells, extraction, concentration, purification and drying of the products.
8 March, 2024 10 March, 2024 3 rd Week 13, 15 March	Maha Shivratri Sunday Microbial Products: a brief discussion about production of certain industrial products such as – Alcohol, Alcoholic beverage (Beer), Organic acids (citric acid), Antibiotics (penicillin),
17 March, 2024 4 th Week 20, 22 March	Sunday Amino acids (glutamic acid, Vitamin (B12), enzymes (protease, alpha-amylase) and a brief account of Steroid Biotransformation. Microbial Foods: Single Cell Proteins.
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- IIIrd Year SEMESTER VI

Subject- Microbial Biotechnology

Paper- XIII

April, 2024 1st Week 3, 5 April	Sewage waste water treatment technique and plants. Biodegradation of xenobiotic compounds.
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 19 April	Microbial polysaccharides and polyesters; production of xanthan gum and polyhydroxyalkanoides (PHA). Bioconversions – Biomining and bioleaching. Biogas production
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 24, 26 April	Microbial technology in agriculture- Bioinsecticides, bioherbicides, biocontrol agents for disease control, advantages over chemical methods. Biofertilizers.
University Examination:-1 May, 2024 Onwards	

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024 (January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- M.Sc. Biotechnology Semester – II

Subject- Enzyme Technology

Paper- BT-110

January, 2024 1 st Week 1, 2, 4 Jan	History of enzymology, advantages of enzymes over chemical catalysts, Nomenclature and classification of enzymes;
7 Jan, 2024 2 nd Week 8, 9, 11 Jan	Sunday Determination of three dimensional structure of enzyme by X-ray crystallography and NMR spectrometry, importance of 3-D structure of an enzyme;
14 Jan, 2024 3 rd Week 15, 16, 18 Jan	Sunday Classification of enzyme structures, structures adopted by enzymes, principles that govern the 3-D structure adopted by enzymes;
17 Jan, 2024 21 Jan, 2024	Shri Guru Gobind Singh Jayanti Sunday
4 th Week 22, 23, 25 Jan	Forces for stability of 3-D structure; Denaturation and renaturation; Isoenzymes, + TEST
26 Jan. 2024 28 Jan, 2024	Republic Day Sunday
5 th Week 29, 30 Jan	Enzyme specificity, monomeric and oligomeric enzymes, multienzyme complex, holoenzyme, apo-enzyme, cofactor, coenzyme, prosthetic group;

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- M.Sc. Biotechnology Semester – II

Subject- Enzyme Technology

Paper- BT-110

February, 2024 1 st Week 1 Feb	enzyme activity unit, turn over number and specific activity, Ribozymes and Abzymes – A brief account.
4 Feb, 2024	Sunday
2 nd Week 5, 6, 8 Feb	Enzyme action; effect of enzyme on the rate and equilibrium of a reaction; principles that explain catalytic power and substrate specificity of enzymes; enzyme substrate complex,
11 Feb, 2024	Sunday
3 rd Week 12, 13, 15 Feb	factors responsible for catalytic efficiency of enzyme; proximity and orientation effect, acid-base catalysis, covalent catalysis, strain and distortion theory; Nature of active site, identification of functional groups at active sites;
14 Feb, 2024 18 Feb, 2024	Basant Panchmi Sunday
4 th Week 19, 20, 22 Feb	Regulatory enzymes- covalently modulated enzymes, allosteric enzymes and their mode of action; regulation of enzyme activity in the living system. + TEST
25 Feb, 2024	Sunday
5 th Week 26, 27, 29 Feb	An introduction to enzyme kinetics and its importance, Methods used for investigating the kinetics of enzyme catalyzed reactions; factors affecting the velocity of enzyme catalysed reaction;

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- M.Sc. Biotechnology Semester – II

Subject- Enzyme Technology

Paper- BT-110

3 March, 2024	Sunday
2 nd Week 4, 5, 7 March	Michaelis-Menten equation, V_{max} , K_m and its significance; Lineweaver Burk plot- its advantages and limitations, Eadie- Hofstee and Hanes plots; + TEST
8 March ,2024 10 March, 2024	Maha Shivratri Sunday
3 rd Week 11, 12, 14 March	enzyme inhibition, types of enzyme inhibitions- competitive, uncompetitive, noncompetitive, mixed type inhibition and determination of K_i , feedback inhibition;
17 March, 2024	Sunday
4 th Week 18, 19, 21 March	Strategies used for enzyme production, isolation and purification, method of calculating the purification fold; estimation of enzyme activity;
23 March- 31 March	Holi Break

KVA DAV College for Women, Karnal

Lesson Plan for the Even Semester, 2024

(January - April)

Name of the Teacher – Ms. Manpreet Kaur

Class- M.Sc. Biotechnology Semester – II

Subject- Enzyme Technology

Paper- BT-110

April, 2024 1st Week 1 April- 6 April	characterization of an enzyme, criteria of enzyme purity, determination of the molecular weight (Mr) and the number of sub-units of an enzyme;
7 April, 2024	Sunday
2nd Week 8 April – 13 April	Sessional Exams
11 April, 2024 14 April, 2024	Id-UI-Fitr Sunday
3rd Week 15, 16, 18 April - 20 April	enzyme immobilization and its importance; protein engineering; enzyme therapy, enzyme inhibitors and drug design;
17 April, 2024 21 April, 2024	Ram Navmi Sunday
4th Week 22, 23, 25 April	enzymes as biosensors, enzyme reactors; Applications of enzymes in medicine, textile, leather, detergent, paper, bakery, + TEST
5th Week 29 April - 30 April	Applications of enzymes in dairy industry, beverage and fruit processing, food processing and preservation, clinical applications of enzyme estimation.
University Examination:-1 May, 2024 Onwards	