I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:Microbial Biotechnology Class: BSc-III

Name of the Teachers (Section Wise) : Anjushree

WEEK	DATE	TOPICS
1	February (1-4)	
		Microbial Biotechnology: Historical landmarks, General concept.
		Microbial Biotechnology: Historical landmarks, General concept.
		Microbial Biotechnology: Historical landmarks, General concept.
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	
		Screening and Isolation of Microorganisms: Industrially important microbes, their screening and isolation
		Screening and Isolation of Microorganisms: Industrially important microbes, their screening and isolation
		Screening and Isolation of Microorganisms: Industrially important microbes, their screening and isolation
SUNDAY - 12.02.2023		
3	February (13-17)	
		Enrichment culture. Strain improvement- bacterial genetics
		Enrichment culture. Strain improvement- bacterial genetics
		mutant selection,Recombination.
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	
		mutant selection,Recombination.
		Recombinant DNA technology. Strain preservation and maintenance
		Recombinant DNA technology. Strain preservation and maintenance
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	
		Nutrition and cultivation of microorganisms: Basic nutrition and metabolism
		Nutrition and cultivation of microorganisms: Basic nutrition and metabolism
		Natural and Synthetic media
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	
		Natural and Synthetic media
		Sterilization techniques
		Sterilization techniques
SUNDAY - 19.03.2023		

8	March (20-25)	
		Microbial growth kinetics
		Microbial growth kinetics
		Fermentation types
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	
		Fermentation types
		Quantification of growth,Thermodynamics of growth, effect of different factors on growth.
		Quantification of growth,Thermodynamics of growth, effect of different factors on growth.
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	
		Physco-chemical standards used in bioreactors (agitation, aeration, ph, temp., dissolved oxygen etc.).
		Physco-chemical standards used in bioreactors (agitation, aeration, ph, temp., dissolved oxygen etc.).
		Bioreactors types
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	
		Bioreactors types
		Bioreactors types
		Process Development
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	
		Process Development
		Downstream Processing
		Downstream Processing
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	
		Bioreactor applications
		Test
		Microbial Products: a brief discussion about production of certain industrial products: Alcohol
SUNDAY - 30.04.2023		
13	May (1-6)	
		Microbial Products: a brief discussion about production of certain industrial products: Alcohol
		Applications of Microbial Biotechnology
		Applications of Microbial Biotechnology
SUNDAY - 07.05.2023		
14	May (8-13)	
		Applications of Microbial Biotechnology
		Fermentation types
		Revision
SUNDAY - 14.05.2023		
14	May (15-16)	
Examination 17.05.2023 Onwards.		

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LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Computer Network **Class: B.SC (CS)**

Name of the Teachers (Section Wise) : Milan Sharma (CS)

WEEK	DATE	TOPICS
1	February (1-4)	Introduction to Data Communication and Computer Networks;
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Uses of Computer Networks;
		Types of Computer Networks and their Topologies;
		Network Hardware Components Connectors, Transceivers, Repeaters
SUNDAY - 12.02.2023		
3	February (13-17)	Hubs, Network Interface Cards and PC Card
		Bridges, Switches, Routers, Gateways;
		Network Software: Network Design issues and Protocols
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Connection-Oriented and Connectionless Services; OSI Reference Model
		TCP/IP Model
		Analog and Digital Communications Concepts: Analog and Digital data and signals
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	Bandwidth and Data Rate
		Capacity, Baud Rate; Guided and Wireless Transmission Media
		Communication Satellites
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	Switching and Multiplexing;
		ASSIGNMENT
		Modems and modulation techniques
SUNDAY - 19.03.2023		

8	March (20-25)	Data Link Layer Design issues; Error Detection
		Correction methods
		Sliding Window Protocols:
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	CONDITIONAL
		One-bit, Go Back N and Selective Repeat;
		Media Access Control: ALOHA, Slotted ALOHA
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	CSMA, Collision free protocols;
		Introduction to LAN technologies: Ethernet
		Switched Ethernet, Fast Ethernet, Gigabit Ethernet;
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	Token Ring; Introduction to Wireless LANs and Bluetooth;
		Routing Algorithms: Flooding, Shortest Path Routing,
		ASSIGNMENT
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	Distance Vector Routing;
		Link State Routing, Hierarchical Routing
		Congestion Control;
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	Traffic shaping
		Choke packets;
		Load shedding
SUNDAY - 30.04.2023		
13	May (1-6)	Application Layer: Introduction to DNS,
		E-Mail and WWW services
		Network Security Issues: Security attacks;
SUNDAY - 07.05.2023		
14	May (8-13)	Encryption methods; Firewalls
		Digital Signatures
		REVISION
SUNDAY - 14.05.2023		
14	May (15-16)	REVISION
		REVISION
Examination 17.05.2023 Onwards.		

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LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Dynamics Class: B.A. /B.Sc.-III

Name of the Teachers (Section Wise) : Ms. Kanak Sharma

WEEK	DATE	TOPICS
1	February (1-4)	Discussion of some basic concepts and definitions
		Concept of displacement, velocity, acceleration, Conversion formulae
		Motion with constant acceleration
		Particle projected vertically downwards
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Particle projected vertically upwards under gravity.
		Motion along a plane curve, velocity along a plane curve
		Acceleration along a plane curve
		Components of velocity and acceleration
		Angular veocity and angular acceleration
		Relation between angular and linear velocity
SUNDAY - 12.02.2023		
3	February (13-17)	Questions related to angular and linear velocity
		Concept of radial and transverse velocity and acceleration and their derivations
		Concept of radial and transverse velocity and acceleration and their derivations
		Problems based on radial and transverse velocity and acceleration
		Concept of tangential and normal velocity and acceleration
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Derivation of tangential and normal velocity
		Derivation of tangential and normal acceleration
		Questions and discussion of problems
		Relative Displacement, Relative Velocity
		Determination of Relative Velocity
		Expression for the magnitude and direction of Relative Velocity
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	Questions based on relative velocity and discussion of problems
		Questions based on relative velocity and discussion of problems
		Questions based on relative velocity and discussion of problems
		Class Test
		Simple Harmonic Motion
		Derivation of expression for Simple Harmonic Motion
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	Nature and Amplitude of Simple Harmonic Motion
		Periodic motion and articles based on it
		Frequency
		Questions based on Simple Harmonic Motion
		Questions based on Simple Harmonic Motion
		Problem Discussion
SUNDAY - 19.03.2023		

8	March (20-25)	Introduction to Newton's laws of Motion
		Mass, momentum and force
		Gravitational Force
		Newton's first ,second and third laws of Motion
		Questions based on Newton's laws of Motion
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	Questions based on Newton's laws of Motion
		Pressure of a body resting on a horizontal plane moving vertically upwards or downwards
		Pressure of a body resting on a horizontal plane moving vertically upwards or downwards
		Related questions
		Related questions
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	Class Test
		Motion of a lift and problems based on it
		Motion of a lift and problems based on it
		Motion of two bodies connected by a string and related articles
		Motion on a smooth horizontal plane
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	Motion on a rough horizontal plane
		Atwood's machine
		Questions and discussion of problems
		Questions and discussion of problems
		Projectile Motion and articles based on it
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	Derivations for latus rectum, vertex, directrix
		Axis of trajectory of a projectile, time of flight, horizontal range, greatest height, directions of projection
		Questions based on Projectile Motion
		Questions based on Projectile Motion
		Concept of velocity at any point of trajectory and related problems.
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	Concept of velocity at any point of trajectory and related problems.
		Derivations for finding directions of projection for a particle to hit a given point and problems based on it
		Derivations for finding directions of projection for a particle to hit a given point and problems based on it
		Concept of range and time of flight on an inclined plane and their derivations
		Maximum range up the plane, questions based on it and discussion of problems
		Work, Power and Energy
SUNDAY - 30.04.2023		
13	May (1-6)	Elastic Strings
		Introduction to Central Orbits and derivation of theorems based it
		Derivation of differential equation of central orbit in polar form
		Derivation of differential equation of central orbit in pedal form
		Areal velocity and its derivation
		Derivation of results for elliptic orbit
SUNDAY - 07.05.2023		
14	May (8-13)	Hyperbolic orbit and parabolic orbit
		Velocity in a circle and related theorems, Problems based on central orbits
		Apse and apsidal distances, theorems based on apse and apsidal distances
		Velocity from infinity, questions based on apse and apsidal distances and Discussion of problems
		Kepler's Laws of Planetary Motion
		Motion of a particle on smooth and rough plane curves.
SUNDAY - 14.05.2023		
14	May (15-16)	Cycloidal motion, motion on a cycloid and questions based on it
		Motion on a rough curve under gravity, motion of a particle in three dimensions
Examination 17.05.2023 Onwards.		

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LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the paper :- Solid State And Nano Physics Class : B.Sc -III(Physics)

Name of the Teacher(Section wise):Ms. Manisha

WEEK	DATE	TOPICS
1	February (1-4)	Introduction, Types of solids, Types of Crystalline Solids
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Advantages and disadvantages, crystal transition vector and crystal axis
		Crystal lattice and basis, Periodicity in crystal , unit cell and primitive cell, brillouin zone
		Symmetric operation for a 2D crystal, 5 fold symmetry
SUNDAY - 12.02.2023		
3	February (13-17)	Point group, Bravis lattice in 2D
		Bravis lattice in 3D, numerical problem
		Miller indices and crystal plains , interplanar spacing [Assingnment-1]
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Cubic crystal and its characteristics
		HCP structure, Sodium chloride structure
		Diamond Structure,
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	Zn blend structure,
		cesium chloride structure
		Numerical problems
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	Diffraction of X-ray, Bragg's law and it characteristics
		Experimental X-ray diffraction methods
		Powder method, K-space
SUNDAY - 19.03.2023		

8	March (20-25)	Class test
		Reciprocal lattice and its need
		Reciprocal lattice vectors for orthogonal crystal axes, Reciprocal lattice vectors for general crystal axes
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	Construction and physical significance of reciprocal lattice
		Properities of reciprocal lattice, Relation between crystal lattice axes and crystal reciprocal lattice axes
		Volume of unit cell of reciprocal lattice, Reciprocal S.C lattice,
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	
		Reciprocal B.C Lattice
		Reciprocal F.C.C Lattice
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	Numerical problems
		Super conductivity-Introduction, a survey of super conductivity and super conducting system
		Critical magnetic field, flux exclusion: The Meissner Effect, Isotope effect
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	London theory
		Pippard's Equation, Pippard's Modification and Coherence Length
		Flux Quantisation, Classification of Super conductor
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	BCS theory of superconductivity [Assignment -2]
		Josephson effect [AC and DC], H.T Superconducters
		Applications of superconductivity and their limitations
SUNDAY - 30.04.2023		
13	May (1-6)	Nano Physics: Introduction, History of nano technology, defination, Length Scale, Nano Scale and its importance
		Size Dependence, Benefits in Molecular manufacturing
		Challenges in molecular manufacturing, Molecular assembler
SUNDAY - 07.05.2023		
14	May (8-13)	Tools for synthesis of nano structure
		Tools for synthesis of nano structure
		Electron microscopy: SEM, TEM
SUNDAY - 14.05.2023		
14	May (15-16)	Revision
		Revision
Examination 17.05.2023 Onwards.		

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LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Physical Chemistry **Class: B.Sc-III (M)**

Name of the Teachers (Section Wise) : DR. VIKRAM KUMAR

WEEK	DATE	TOPICS
1	**February (1-4)**	Introduction to statistical mechanics Need for statistical thermodynamics, thermodynamic probability, Maxwell Boltzmann distribution statistics,
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	**February (6-11)**	Born oppenheimer approximation, partition function and its physical significance. Factorization of partition function.
SUNDAY - 12.02.2023		
3	**February (13-17)**	Photochemistry Interaction of radiation with matter, difference between thermal and photochemical processes.
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	**February (20-25)**	Laws of photochemistry: Grotthus-Drapper law, Stark Einstein law (law of photochemical equivalence),
SUNDAY - 26.02.2023		
5	**February (27-28) March (1-4)**	Jablonski diagram depiciting various processes occurring in the excited state,
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	**March (13-18)**	qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield, photosensitized reactions-energy transfer processes (simple examples).
SUNDAY - 19.03.2023		

8	**March (20-25)**	Solutions, Dilute Solutions and Colligative Properties Ideal and non-ideal solutions, methods of expressing concentrations of solutions, Dilute solutions,
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	**March (27-31) April (1)**	Raoult's law. Colligative properties: (i) relative lowering of vapour pressure (ii) Elevation in boiling point (iii) depression in freezing point
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	**April (3-8)**	(iv) osmotic pressure. Thermodynamic derivation of relation between amount of solute and elevation in boiling point and depression in freezing point..
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	**April (10-15)**	Applications in calculating molar masses of normal, dissociated and associated solutes in solution.
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	**April (17-21)**	Phase Equillibrium Statement and meaning of the terms – phase, component and degree of freedom,
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	**April (24-29)**	thermodynamic derivation of Gibbs phase rule,
SUNDAY - 30.04.2023		
13	**May (1-6)**	phase equilibria of one component system –Example – water system.
SUNDAY - 07.05.2023		
14	**May (8-13)**	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, desilverisation of lead
SUNDAY - 14.05.2023		
14	**May (15-16)**	Revision,Class Test
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:-Organic Chemistry **Class: B.Sc-III(M)**

Name of the Teachers (Section Wise) : Prof. RANJANA SHARMA

WEEK	DATE	TOPICS
1	**February (1-4)**	Organic Synthesis via Enolates Acidity of □ -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation.
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	**February (6-11)**	Keto-enol tautomerism of ethyl acetoacetate. Heterocyclic Compounds Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine.
SUNDAY - 12.02.2023		
3	**February (13-17)**	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution.
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	**February (20-25)**	Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole.
SUNDAY - 26.02.2023		
5	**February (27-28) March (1-4)**	Introduction to condensed five and six- membered heterocycles. Prepration and reactions of indole,
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	**March (13-18)**	quinoline and isoquinoline with special reference to Fisher indole synthesis, Skraup synthesis and Bischler-Napieralski synthesis.
SUNDAY - 19.03.2023		

8	**March (20-25)**	Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline.
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	**March (27-31) April (1)**	Amino Acids, Peptides& Proteins Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis.
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	**April (3-8)**	Preparation of □ -amino acids. Structure and nomenclature of peptides and proteins. Classification of proteins.
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	**April (10-15)**	Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid–phase peptide synthesis.
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	**April (17-21)**	Structures of peptides and proteins: Primary & Secondary structure.
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	**April (24-29)**	Synthetic Poly mers Addition or chain-growth polymerization.
SUNDAY - 30.04.2023		
13	**May (1-6)**	Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers.
SUNDAY - 07.05.2023		
14	**May (8-13)**	Condensation or step growth polymerization. Polyesters, polyamides, phenol formaldehyde resins. Natural and synthetic rubbers
SUNDAY - 14.05.2023		
14	**May (15-16)**	Revision,Class Test
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Inorganic Chemistry Class: B.Sc -III(M)

Name of the Teachers (Section Wise) : Prof. SIMRAN

WEEK	DATE	TOPICS
1	**February (1-4)**	Acids and Bases Arrhenius, Bronsted-lowry, Lux-flood, solvent system and Lewis concept of acids and bases,
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	**February (6-11)**	relative strength of acids and bases, levelling solvents, hard and soft acids and bases(HSAB),
SUNDAY - 12.02.2023		
3	**February (13-17)**	Applications of HSAB principle.
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	**February (20-25)**	Organometallic chemistry Definition, classification and nomenclature of organometallic compounds, preparation,
SUNDAY - 26.02.2023		
5	**February (27-28) March (1-4)**	properties and bonding of alkyls of Li, Al, Hg and Sn,
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	**March (13-18)**	concept of hapticity of organic ligand, Structure and bonding in metal-ethylenic complexes,
SUNDAY - 19.03.2023		

8	**March (20-25)**	Structure of Ferrocene, classification in metal carbonyls, preparation, properties and bonding in mononuclear carbonyls.
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	**March (27-31) April (1)**	Bio inorganic chemistry Metal ions present in biological system, classification on the basis of action (essential, non essential, trace, toxic),
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	**April (3-8)**	Metalloporphyrins with special reference to haemoglobin and myoglobin.
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	**April (10-15)**	Biological role of Na+ , K+ , Ca+2, Mg+2 , Fe+2 ions,
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	**April (17-21)**	Cooperative effect, Bohr effect.
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	**April (24-29)**	Silicones and Phosphazenes Nomenclature, classification
SUNDAY - 30.04.2023		
13	**May (1-6)**	prepration and uses of silicones, elastomers,
SUNDAY - 07.05.2023		
14	**May (8-13)**	polysiloxane copolymers, poly phosphazenes and bonding in triphosphazene
SUNDAY - 14.05.2023		
14	**May (15-16)**	Revision,Class Test
Examination 17.05.2023 Onwards.		

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LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (II / IV / VI - Semester)

Name of the Paper:- Economic Botany Class: B. Sc. III (6th Semester)

Name of the Teachers (Section Wise) : DR. NIDHAN SINGH

WEEK	DATE	TOPICS
1	February (1-4)	
		Origin of Cultivated Plants
		Centers of Origin of Cultivated Plants
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	
		Food Plants-I: Wheat
		Food Plants-I: Wheat
		Food Plants-II: Rice
SUNDAY - 12.02.2023		
3	February (13-17)	
		Food Plants-III: Maize
		Pulses-I: Gram
		Pulses-II: Arhar
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	
		Pulses-III: Peas
		Assignments
		Vegetables-I: Potato
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	
		Vegetables-II: Tomato
		Vegetables-III: Onion
SUNDAY - 19.03.2023		

8	March (20-25)	
		Fibre Plants-I: Cotton
		Fibre Plants-II: Jute
		Fibre Plants-III: Flax
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	
		Revision, Discussion and Doubts
		Oil Plants-I: Groundnut
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	
		Oil Plants-II: Mustard
		Oil Plants-III: Coconut
		Spices-Morphology, Cultivation and Uses of Coriander
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	
		Spices-Morphology, Cultivation and Uses of Ferula
		General Account of Timber Plants
		Spices-Morphology, Cultivation and Uses of Ginger
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	
		Spices- Morphology, Cultivation and Uses of Turmeric
		Spices- Morphology, Cultivation and Uses of Cloves
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	
		Revision, Discussion and Doubts
		Medicinal Plants- *Cinchona*
		Medicinal Plants- *Rauvolfia*
SUNDAY - 30.04.2023		
13	May (1-6)	
		Medicinal Plants- *Atropa*
		Medicinal Plants- *Opium*
		Medicinal Plants- *Cannabis* , Neem
SUNDAY - 07.05.2023		
14	May (8-13)	
		Botanical Description, Processing of Tea
		Botanical Description, Processing of Coffee
		Botanical Description, Processing of Rubber (*Hevea,Sugarcane)*
SUNDAY - 14.05.2023		
14	May (15-16)	General Account of Energy Plantations, Biofuels
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester

UG (II / IV / VI - Semester VI

Name of the Paper:- Aquaculture and Pest Management Class:BSc.VI Sem Class: B.Sc IIIrd

Name of the Teachers (Section Wise) : SHIVANI

WEEK	DATE	TOPICS
1	February (1-4)	Introduction to World Fisheries
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Introduction to World Fisheries
		Fresh Water Fishes Of India: River System
		Fresh Water Fishes Of India: River System
SUNDAY - 12.02.2023		
3	February (13-17)	
		Reservoir, pond, Tank Fisheries
		Captive and Culture Fisheries
		Captive and Culture Fisheries
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Cold Water Fisheries
		Fishing Crafts and Gears
		Fishing Crafts and Gears
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	
		Fishing Crafts and Gears
		Fishing Crafts and Gears
		ASSIGNMENT
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	
		Fin Fishes
		Crustaceans
		Test
SUNDAY - 19.03.2023		
8	March (20-25)	
		Molluscs and their culture
		Test
		Pests of Sugarcane

SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	**March (27-31) April (1)**	
		Pests of Sugarcane
		Pests of Sugarcane
		Pests of Sugarcane
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	**April (3-8)**	
		Pests of Sugarcane
		Pests of Cotton
		Pests of Cotton
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	**April (10-15)**	
		Pests of Cotton
		Pests of Cotton
		Pest of Wheat
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	**April (17-21)**	Test of pest
		Pests of Paddy
		Pests of Paddy
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	**April (24-29)**	
		Pests of Paddy
		Pests of Paddy
		Conditional Test
SUNDAY - 30.04.2023		
13	**May (1-6)**	
		Pests of Vegetables
		Pests of Vegetables
		Pests of Vegetables
SUNDAY - 07.05.2023		
14	**May (8-13)**	
		Pests of Vegetables
		Revision of Fishing Crafts and Gears
		Revision Of River System
		Revision of pests of sugarcane
		Revision of Pests of cotton
SUNDAY - 14.05.2023		
14	**May (15-16)**	Pest of paddy
		Test
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Linear Algebra Class: B.Sc.-III (NM)

Name of the Teachers (Section Wise) : Dr. Arpana Garg

WEEK	DATE	TOPICS
1	February (1-4)	Vector Spaces
		Definition
		Examples
		More Examples on Vector Space
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Properties of Vector Space
		Examples
		Exercise
		Problems
		Subspace
		Theorems on Subspace
SUNDAY - 12.02.2023		
3	February (13-17)	Exercise
		Problems
		Linear Combination
		Theorems
		Examples
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Exercise
		Sum of Spaces and Direct sum
		Examples
		Linearly Dependent and Independent Vectors
		Theorems
		Examples
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	Problems
		Basis and Dimension
		Finite Dimensional Vector Spaces
		Theorems
		Examples
		Examples
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	Problems
		Dimension of a Vector Space
		Theorems
		Examples
		Problems
		Quotient Space
SUNDAY - 19.03.2023		

8	March (20-25)	Theorems
		Examples
		Homomorphism
		Kernal of a Homomorphism
		Theorems based on Homomorphism
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	Linear Transformation
		Theorems
		Examples
		Problems
		Exercise
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	Null Space and Range of a Linear transformation
		Theorems
		Rank and Nullity of a linear Transformation
		Theorems
		Examples
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	Algebra of a Linear Transformation
		Vector Space of Linear Transformations
		Theorems based on Homomorphism
		Algebra of a Linear Transformation
		Singular and Non Singular Linear Transformation
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	Theorems, Examples
		Minimal Polynomial
		Theorems, Examples
		Matrix Associatted with Linear Transformation
		Theorems
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	Examples
		Problems
		Transition Matrix
		Examples
		Inner Product Space
		Problems
SUNDAY - 30.04.2023		
13	May (1-6)	Norm of a vector space
		Schwarz's Inequality
		Orthogonal vectors
		Gram Schmidt Orthogonal;isation process
		Bessels Inequality
		Unitary Transformation
SUNDAY - 07.05.2023		
14	May (8-13)	Theorems
		Eigen Values and Eigen Vectors
		Diagonaliosable Linear Operator
		Examples
		Problems
		Dual Space
SUNDAY - 14.05.2023		
14	May (15-16)	Examples
		Revision
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the paper :- Solid State And Nano Physics Class : B.Sc -III(Physics)

Name of the Teacher(Section wise):Ms. Manisha

WEEK	DATE	TOPICS
1	February (1-4)	Introduction, Types of solids, Types of Crystalline Solids
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	Advantages and disadvantages, crystal transition vector and crystal axis
		Crystal lattice and basis, Periodicity in crystal , unit cell and primitive cell, brillouin zone
		Symmetric operation for a 2D crystal, 5 fold symmetry
SUNDAY - 12.02.2023		
3	February (13-17)	Point group, Bravis lattice in 2D
		Bravis lattice in 3D, numerical problem
		Miller indices and crystal plains , interplanar spacing [Assingnment-1]
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	Cubic crystal and its characteristics
		HCP structure, Sodium chloride structure
		Diamond Structure,
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	Zn blend structure,
		cesium chloride structure
		Numerical problems
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	Diffraction of X-ray, Bragg's law and it characteristics
		Experimental X-ray diffraction methods
		Powder method, K-space
SUNDAY - 19.03.2023		

8	March (20-25)	Class test
		Reciprocal lattice and its need
		Reciprocal lattice vectors for orthogonal crystal axes, Reciprocal lattice vectors for general crystal axes
SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	March (27-31) April (1)	Construction and physical significance of reciprocal lattice
		Properities of reciprocal lattice, Relation between crystal lattice axes and crystal reciprocal lattice axes
		Volume of unit cell of reciprocal lattice, Reciprocal S.C lattice,
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	April (3-8)	
		Reciprocal B.C Lattice
		Reciprocal F.C.C Lattice
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	April (10-15)	Numerical problems
		Super conductivity-Introduction, a survey of super conductivity and super conducting system
		Critical magnetic field, flux exclusion: The Meissner Effect, Isotope effect
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	April (17-21)	London theory
		Pippard's Equation, Pippard's Modification and Coherence Length
		Flux Quantisation, Classification of Super conductor
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	April (24-29)	BCS theory of superconductivity [Assignment -2]
		Josephson effect [AC and DC], H.T Superconducters
		Applications of superconductivity and their limitations
SUNDAY - 30.04.2023		
13	May (1-6)	Nano Physics: Introduction, History of nano technology, defination, Length Scale, Nano Scale and its importance
		Size Dependence, Benefits in Molecular manufacturing
		Challenges in molecular manufacturing, Molecular assembler
SUNDAY - 07.05.2023		
14	May (8-13)	Tools for synthesis of nano structure
		Tools for synthesis of nano structure
		Electron microscopy: SEM, TEM
SUNDAY - 14.05.2023		
14	May (15-16)	Revision
		Revision
Examination 17.05.2023 Onwards.		

I.B. (PG) COLLEGE, PANIPAT

LESSON PLAN

SESSION 2022-23 (01.02.2023 to 16.05.2023)

Weekly Lesson Plan Even Semester)

UG (VI - Semester)

Name of the Paper:- Atomic And Molecular Spectroscopy Class:B.Sc(III)

Name of the teacher(section wise):-Ms Sonia

WEEK	DATE	TOPICS
1	February (1-4)	Atomic Spectroscopy: Introduction, Emission and absorption spectra,Aomic spectra
		Wave number, Spectra of hydrogen atom, Bohr Postulates
		Unquantized states and continuous spectra, Spectral series in absorption spectra
SUNDAY - 05.02.2023 Holiday (Guru Ravidass Jayanti)		
2	February (6-11)	
		Effect of nuclear motion on line spectra
		Wilson's Sommerfeld quantization rule
		Variation in Rydberg Constant due to finite mass, short comings of Bohr'S theory
SUNDAY - 12.02.2023		
3	February (13-17)	
		De Broglie interpretation of Bohr's Quantization law , Bohr's Correspondence Principle
		Sommerfeld extension of Bohr's model
		Short coming of Bohr's Sommerfeld theory, Vector Atom Model
HOLIDAY - 18.02.2023 (Maha Shivratri)		
SUNDAY - 19.02.2023		
4	February (20-25)	
		Space quantization, Electron spin, Coupling of orbital and spin angular momentum
		Spectroscopic term and their notations, Quantum number assocated with vector atom model
		Transition probability and selection rule, Vector atom model
SUNDAY - 26.02.2023		
5	February (27-28) March (1-4)	
		Orbital magnetic dipole moment, behaviour of magnetic dipole in external magnetic field
		Larmor precession and theorem
		Penetrating and non penetrating orbit
SUNDAY - 05.03.2023		
Holi Vacations - 05.03.2023 to 12.03.2023		
7	March (13-18)	
		Penetrating orbit on classical model
		Quantum defect
		Raman effect, Electronic spectra
SUNDAY - 19.03.2023		
8	March (20-25)	
		Spin orbit interaction energy for Penetrating orbit
		Quantum mechanical relativity correction

SUNDAY - 26.03.2023		
HOLIDAY 23.03.2023 Shaheedi Diwas		
9	**March (27-31) April (1)**	Hydrogen fine spectra
		Main features of alkali spectra ,
		term series and limit, Rydberg Ritz Combination principle
HOLIDAY - 30.03.2023 (Ram Navmi)		
SUNDAY - 02.04.2023		
9	**April (3-8)**	Absorption spectra of alkali atoms , observed doublet fine structure in the spectra of alkali metal
		Inensity rules for doublet , Comparision of alkali spectra and hydrogen spectrum
HOLIDAY - 04.04.2023 (Mahavir Jayanti)		
SUNDAY - 09.04.2023		
10	**April (10-15)**	Essential features of spectra of alkaline earth elements,Vector model for two valence electron atoms, Application of spectra
		Test
SUNDAY - 16.04.2023		
HOLIDAY - 14.04.2023 (DR.B.R.Ambedkar Jayanti)		
11	**April (17-21)**	
		L-S and Russell -Saunders Coupling Scheme,JJ coupling Scheme,Interaction energy in LS Coupling
		Lande's Interval rule, Pauli princxiple and periodic classification of the elements
SUNDAY - 23.04.2023		
Holiday Id-Ul-Fitr/Parshuram Jayanti (Saturaday)		
12	**April (24-29)**	
		Interaction energy in JJ Coupling
		Equivalent and non equivalent electrons, Comparision of spectral terms of LS and JJ coupling
		Hyperfine structure of spectral lines and its origin, isotope effect, nuclear spin
		Atom in external field: Zeeman Effect, Experimental setup for studying Zeeman Effect
SUNDAY - 30.04.2023		
13	**May (1-6)**	Explaination of normal Zeeman Effect (Classical and quantum mechanical), Lande g-factor
		Zeeman pattern of D1 and D2 lines of sodium atom
		Paschen Back effect, Weak field stark effect of hydrogen atom, Molecular Physics
		Raman effect, Electronic spectra
SUNDAY - 07.05.2023		
14	**May (8-13)**	Numerical Problems
		Revision
		Revision
SUNDAY - 14.05.2023		
14	**May (15-16)**	
Examination 17.05.2023 Onwards.		