GDC Memorial College

Bahal (Bhiwani) - 127028

NAAC Accredited Grade "B" (Second Cycle) and Recognized under the Sections 2(f) & 12B of the UGC Act, 1956

Affiliated to Ch. Bansi Lal University, Bhiwani

Lesson Plan- January to April 2026

Name - Dr. SUMAN DEVI **Department - Chemistry**

Class - M.Sc. **Subject -Inorganic Chemistry Special-IV**

Semester - 4th **Subject Code - 22CHE-401**

Week-1	**UNIT-1**
15.Jän.26	Bioinorganic chemistry of Na , K , Mg2 and Ca2+
16.Jän.26	Ionophores, active transport of cations across membranes
Week-2	
19.Jän.26	sodium pump, Calcium pump,
20.Jän.26	Do
22.Jän.26	Calcium carriers, Biochemistry of calcium as horrnonal messenger
23.Jän.26	Muscle contraction blood clotting, neurotranmitter,
Week-3	
27.Jän.26	Effect of metal ions on nucleic acids,
29.Jän.26	Heme proteins and oxygen uptake
30.Jän.26	structure and function of hemoglobin
Week-4	
2-Feb-26	myoglobin, hemocyanins and hemerythin.
3-Feb-26	Do
5-Feb-26	**UNIT-2**
6-Feb-26	Fixation of dinitrogen biologically and abiologically
Week-5	
9-Feb-26	Electron Transfer in Biological Systems Structure and function of metalloproteins in
10-Feb-26	electron transport, processes-cytochromes and iron-sulphur proteins, synthetic models.
12-Feb-26	Ferritin, transferrin, and siderophores,
13-Feb-26	Do
Week-6	
16-Feb-26	biotransformation of non-metallic inorganic compounds
17-Feb-26	Do
19-Feb-26	Unit test
20-Feb-26	Do
Week-7	
23-Feb-26	Nitrogenase, model for nitrogenase,
24-Feb-26	Do
26-Feb-26	metal-N2 complexes, photosynthesis and chlorophyll.
27-Feb-26	Do
Week-8	**Unit -3**

2-Mar-26	Zinc Enzymes — Carboxypeptidase
5-Mar-26	Carbonic anhydrase
6-Mar-26	alkaline phosphatase and alcohol dehydrogenase
Week-9	
9-Mar-26	Iron Enzymes — Catalase
10-Mar-26	Peroxidase and Cytochrome P- 450,
12-Mar-26	Copper Enzymes — Superoxide dismutase
13-Mar-26	Unit test
Week-10	
16-Mar-26	blue copper electron transfer enzyme
17-Mar-26	Molybdenum oxatransferase enzymes — Xanthine oxidase Coenzymes — Vitamin B 12
19-Mar-26	**Unit -4**
20-Mar-26	Biochemical basis ofessential metal deficient diseases; Iron, copper and zinc deficiencies
Week-11	
23-Mar-26	Therapies of diseases and Different classes of Inorganic drugs
24-Mar-26	Drugs in hypo and hyper activity of thyroids
27-Mar-26	Inorganic drugs in dental carries
Week-12	
30-Mar-26	Inorganic compounds as antacids
31-Mar-26	Role of zinc in tumour growth and inhibition
2-Apr-26	Do
3-Apr-26	Do
Week-13	
6-Apr-26	Anticancer activity and mechanism of platinum complexes and Gold complexes
7-Apr-26	Antibacterial and antiviral properties of metal complexes
9-Apr-26	Do
10-Apr-26	Revision
Week-14	
13-Apr-26	Unit test
14-Apr-26	Revision
16-Apr-26	Revision
17-Apr-26	Revision
Week-15	
20-Apr-26	Problem discussion
21-Apr-26	Problem discussion
23-Apr-26	Revision
24-Apr-26	Revision
Week-16	
27-Apr-26	Revision
28-Apr-26	Revision
30-Apr-26	Revision
	Signature of Faculty

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Lesson Plan- January to April 2026

Name- Mr.Krishan	**Department-Chemistry**
Class - M.Sc	**Subject - Inorganic Chemistry Special-V**
Semester-4th sem	**Code- 22CHE-404**

Week-1	**UNIT-1**
28-Jan-26	Spectra and symmetry, Selection rules,
29-Jan-26	Symmetry and shapes of AB2,AB3
30-Jan-26	AB4,AB5 and AB6
31-Jan-26	modes of bonding of ambidentate ligands
Week-2	
4-Feb-26	ethylene diamine and diketonate complexes
5-Feb-26	changes in spectra of donor molecules on coordination
6-Feb-26	change in symmetry on coordination,bond strength frequency shift relations
7-Feb-26	Use of symmetry to determine the number of active infrared and Raman lines
Week-3	
11-Feb-26	Application of resonance Raman Spectroscopy particularly for the
12-Feb-26	study of active sites of metalloproteins as myoglobin and haemoglobin
13-Feb-26	do
14-Feb-26	Test
Week-4	**UNIT-1I**
18-Feb-26	**Nuclear Magnetic Resonance Spectroscopy:** ^{19}Fand^{31}P NMR spectra
19-Feb-26	Chemical shifts,coupling constants
20-Feb-26	19F Spectra of fluoroacetone,l-bromo-1-Fluoroethane,dimethylphosphorus trifluoride and bromine pentafluoride
21-Feb-26	31P spectra of HPF2, HPO(OH)2,H2PO(OH), cis- Pt(Pet)2Cb
Week-5	
25-Feb-26	Do
26-Feb-26	Application of 31P NMR for structural determination of Complexes with phosphorus ligands
27-Feb-26	Spectra of Paramagnetic materials:Contact shift,its origin and application
28-Feb-26	Pseudocontact shift,Diamagnetic complexes
Week-6	
6-Mar-26	Spectra of free radicals, Lanthanide shift Reagents
7-Mar-26	Magnetic susceptibility Measurement.
Week-7	
11-Mar-26	Solid state NMR- Wide line NMR
12-Mar-26	Magnetic Angle spinning
13-Mar-26	Applications Magnetic Resonance Imaging
14-Mar-26	Do

Week-8	**UNIT-1II**
18-Mar-26	**NuclearQuadrupolar Resonance(NQR) Spectroscopy:** Quadrupolar moment and energylends
19-Mar-26	energy lends of a quadrupolar nuclease and effect of asymmetry parameters
20-Mar-26	Effect of an external magnetic field
21-Mar-26	selected examples for elucidation of structural aspects of inorganic compounds using NQR spectroscopy
Week-9	
25-Mar-26	**Mass Spectroscopy:**Presentation and interpretation of mass spectrum
26-Mar-26	effect of isotopes on appearance of mass spectrum
27-Mar-26	Applications of mass spectroscopy to inorganic compounds
28-Mar-26	Do
Week-10	
1-Apr-26	fingerprint application molelcular weight determination
2-Apr-26	Do
3-Apr-26	evaluation of heat of sublimation of high melting solids
4-Apr-26	Test
Week-11	**UNIT-IV**
8-Apr-26	**Molecular luminescence:**Fluorimetry and Phosphorimetry: Introduction,principles of fluorescence and phosphorescence
9-Apr-26	interpretation of fluorescence spectra
10-Apr-26	factors, fluorescence intensity and concentration
11-Apr-26	instrumentation for fluorimetry
Week-12	
15-Apr-26	applications of fluorimetry
16-Apr-26	Phosphorimetry, instrumentation
17-Apr-26	applications
18-Apr-26	comparison between fluorimetry and phosphorimetry
Week-13	
22-Apr-26	**Circular Dichroism and Optical RotatoryDispersion:**Polarized light,fundamental symmetry requirements
23-Apr-26	optical activity
24-Apr-26	interaction of polarized light with optically active matter
25-Apr-26	optical rotation
Week-14	
29-Apr-26	Cotton effect, configuration of Tris-chelated comp!exes
30-Apr-26	Test
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Lesson Plan- January to April, 2026

Name - Dr. Anita | **Department - Chemistry**

Class - M.Sc Chemistry | **Subject - Advance Topics**

Semester - 4th | **Subject Code - 22-CHE-407**

Week-1	**UNIT-I**
15-01-26	Supramolecular Chemistry: Molecular recognition
16-01-26	Types of molecules
17-01-26	Molecular receptors for different types of molecules
Week-2	
21-01-26	processes and carrier design
22-01-26	Supramolecular devices.
23-01-26	anionic substrates, recognition
24-01-26	Supramolecular reactivity
Week-3	
28-01-26	catalysis, Transport
29-01-26	receptor molecules and multiple recognition
30-01-26	do
31-01-26	Applications
Week-4	
02-02-26	Some examples of self-assembly in supramolecular chemistry
03-02-26	design and synthesis of compounds
04-02-26	question answer
05-02-26	Revision
Week-5	**UNIT-II**
09-02-26	Nanomaterials Technology: Nano materials,
10-02-26	Nanoparticles
11-02-26	Properties of nano structured materials
12-02-26	optical, magnetic, chemical and photo catalytic properties
Week-6	
16-02-26	Synthesis, Physical Vapour deposition(PVD)
17-02-26	Chemical Vapour Deposition(CVD)
18-02-26	Electro deposition and Characterization of nanomaterials by
19-02-26	X-ray diffraction(XRD)
Week-7	
23-02-26	Energy dispersive X-ray Analysis, Microscope

24-02-26	Scanning Electron Microscope(SEM)
25-02-26	Transmission Electron Microscope
26-02-26	Force microscopy (AFM) techniques and application
Week-8	
02-03-26	sol gel, Precipitation, Reverse Micelle
05-03-26	Techniques for their synthesis (Hydrothermal, Solvothermal
Week-9	**UNIT-III**
09-03-26	Solid State-Introduction
10-03-26	Defects and Non-stoichiometry:
11-03-26	Intrinsic and extrinsic defects- point defects
12-03-26	do
Week-10	
09-03-26	line and plane defects, colour centres,
10-03-26	Thermodynamics of Schottkyand Frenkel defect formation
11-03-26	vacancies- Schottky defects and Frenkel defects.
12-03-26	non-stoichiometry and defects.
Week-11	
16-03-26	semiconductors
17-03-26	electronic structure of solids-band theory
18-03-26	Structures
19-03-26	Metals, insulators
Week-12	
23-03-26	semiconductors,doping semiconductors
24-03-26	bandstructure of metals, insulators and semiconductors. Intrinsic and extrinsic
25-03-26	p-n junctions, superconductors
Week-13	
30-03-26	Optical and Magnetic properties.
31-03-26	Question Answer
01-04-26	Revision
02-04-26	Class test
Week-14	**UNIT-IV**
06-04-26	SolidState-II: Solid State Laser
07-04-26	Ruby,YAG and tunablelasers
08-04-26	Inorganic phospho rmaterial
09-04-26	Synthesis and advantagesof optical fibresover conductingfibres.
Week-15	
13-04-26	Alloys- interstitial,substitutional andsuper conducting
14-04-26	Meissner effect, Hume -Rothery rules
15-04-26	do
16-04-26	do
Week-16	
20-04-26	Question Answer

21-04-26	Revision
22-04-26	Class test
23-04-26	
Week-17	
27-04-26	Question Answer
28-04-26	Revision
29-04-26	Class test
30-04-26	Revision

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Lesson Plan- January to April 2026

Name - Dr. Punita	**Department - English**
Class - M.Sc. (Maths & Chemistry)	**Subject - Commuication Skills**
Semester - 2nd	**Subject Code - 21ENG-100**

Week-1	**UNIT-1**
29-Jan-26	Introduction of Syllabus
Week-2	
4-Feb-26	Human Communication: Meaning, Verbal and Non-verbal Communication
5-Feb-26	Types of Communication- Self Communication, Interpersonal Communication
Week-3	
11-Feb-26	Types of Communication- Small Group Communication, Mass Communication
12-Feb-26	Barriers of Communication, The Seven C's of Communication of Effective Comm.
Week-4	
31-Jan-25	Preparing for Interview, CV/Resume
3-Feb-25	Common Courtesies: Introducting oneself Formally, Informally & on Social Media
	Making Requests, Asking for & Giving Permission, Offering Help, Giving Instructions
7-Feb-25	Art of Small Talk, Making Inquiries and Recommendations
	UNIT-2
10-Feb-25	Speaking Skills: Public Speaking- Introduction, Welcome and introductory Speech
	Vote of Thanks Speech, Farewell Speech, Audience Analysis
14-Feb-25	Conversational Practice: Quitting and finding jobs, office Conversation
Week-5	
17-Feb-25	Conversational Practice: Conversations about College and university
18-Feb-25	Revision and quaries
21-Feb-25	Test Unit 2
Week-6	**Unit 3**
24-Feb-25	Personality Development Skills: Personal Grooming, Assertiveness
25-Feb-25	Significace of Critical Thinking
28-Feb-25	Confidence building
Week-7	
3-Mar-25	SWOT Analysis
4-Mar-25	Group Discussion: Introduction
7-Mar-25	Opening and Summarising Group Discussion
Week-8	
10-Mar-25	Some Tips for group discussion
11-Mar-25	Revision and quaries
14-Mar-25	Test of Unit 3
Week-9	**Unit 4**
17-Mar-25	Writing Skills: Email Writing- Guiding Principles for Composition
18-Mar-25	Writing Skills: Email Writing- Guiding Principles for Composition
21-Mar-25	Writing Skills: Email Writing- Guiding Principles for Composition
Week-10	
24-Mar-25	Maintaining Common etiquettes
25-Mar-25	Correspondence (personal business)
28-Mar-25	Writing: tips for good writing style
Week-11	
31-Mar-25	Writing Research article
1-Apr-25	Writing Research article
4-Apr-25	Writing Research article
Week-12	
7-Apr-25	Plagiarism
8-Apr-25	Professional Presentation: Preparing PPTs
11-Apr-25	Professional Presentation: Preparing PPTs
Week-13	
14-Apr-25	Delivering Presentation: Rehearsal, Body Langauge, handling questions
15-Apr-25	Delivering Presentation: Rehearsal, Body Langauge, handling questions
18-Apr-25	Delivering Presentation: Rehearsal, Body Langauge, handling questions
Week-14	
21-Apr-25	Delivering Presentation: Rehearsal, Body Langauge, handling questions
22-Apr-25	Delivering Presentation: Rehearsal, Body Langauge, handling questions
25-Apr-25	Test of Unit 4
Week-15	
28-Apr-25	Revision and quaries
29-Apr-25	Revision and quaries