



MUGBERIA GANGADHAR MAHAVIDYALAYA

P.O.—BHUPATINAGAR, Dist.—PURBA MEDINIPUR, PIN.—721425, WEST BENGAL, INDIA

NAAC Re-Accredited B+Level Govt. aided College

CPE (Under UGC XII Plan) & NCTE Approved Institutions

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DEPARTMENT: CHEMISTRY

Mugberia Gangadhar Mahavidyalaya, Bhupatinagar, Purba Medinipur

Semester	Paper	Topic	Teacher's name	Total Credit	Total Allotted Marks	Weekly Class Hours	Total Class Hours
SEM-I	C1T (Organic Chemistry)	<u>Basics of Organic Chemistry –</u> 1. Bonding and Physical Properties 2. General Treatment of Reaction Mechanism	Dr. Bidhan Chandra Samanta	4	55 (T-40, CA -5, CIA - 10)	2	35
		Stereochemistry – 1 (total)	Goutam Kumar Jana			2	25
	C2T (Physical Chemistry)	Chemical Thermodynamics	Ribhu Maity	4	55 (T-40, CA -5, CIA - 10)	2	25
		1. Kinetic Theory and Gaseous State 2. Chemical Kinetics	Mrigendu Midya			2	35
	C1P (Organic Chemistry lab)	1. Separation of organic compound using solubility. 2. Boiling point of organic liquid compound. 3. Identification of a pure organic compound.	Goutam Kumar Jana	2	20	4	60
	C2P (physical Chemistry lab)	1. Heat of neutralization of a strong acid by a strong base. 2. Study of kinetics of decomposition of H ₂ O ₂ 3. Heat of solution of oxalic acid from solubility measurement.	Ribhu Maity	2	20	2	60
1. PH of unknown Buffer Solution . 2. Study of kinetics of decomposition of			Mrigendu Midya			2	

		H ₂ O ₂ .					
	GE-1T	1. Atomic structure 2. Chemical periodicity 3. Acid and bases 4. Redox reactions	Minakshi Maity	4	55 (T-40, CA - 5, CIA - 10)	2	30
		1. Fundamentals of organic chemistry 2. Stereochemistry 3. Nucleophilic substitution and Elimination Reactions 4. Aliphatic Hydrocarbons	Goutam Kumar Jana			1	30
	GE-1P	1. Estimation of sodium carbonate and sodium hydrogen carbonate. 2. Estimation oxalic acid by KMnO ₄ . 3. Estimation of water of crystallization in Mohr's salt by KMnO ₄ . 4. Estimation of Fe(II) by K ₂ Cr ₂ O ₇ . 5. Estimation of Cu(II) by Na ₂ S ₂ O ₃ .	Minakshi Maity	2		2	60
		1. Detection special element 2. Detection of functional groups	Dr. Bidhan Chandra Samanta			2	
SEM II	C3T (Inorganic Chemistry)	1. Extra nuclear structure of atom 2. Redox reactions and precipitation reactions.	Dr. Narottam Sutradhar	4	55 (T-40, CA - 5, CIA - 10)	2	36
		1. Chemical Periodicity 2. Acid – Base reactions.	Minakshi Maity			2	24
	C3P (Inorganic Chemistry lab)	1. Acid and Base Titrations 2. Oxidation – Reduction Titrimetric	Dr. Narottam Sutradhar	2	20	4	60
	C4T (Organic Chemistry)	Stereochemistry II	Goutam Kumar Jana			2	20
1. General Treatment		Dr. Bidhan					

		of reaction Mechanism II 2. Substitution and Elimination reactions	Chandra Samanta	4	55 (T-40, CA - 5, CIA - 10)	2	40
	C4P (Organic Chemistry lab)	Organic Preparations	Goutam Kumar Jana	2	20	4	60
	GE-2T	Kinetic theory of gases and real gases	Ribhu Maity	4	55 (T-40, CA - 5, CIA - 10)	1	10
		1. Liquids 2. Solids 3. Chemical kinetics	Mrigendu Midya			1	20
		1. Chemical Bonding and Molecular Structure 2. Comparative study of P-block elements	Minakshi Maity			1	30
	GE-2P	1. Surface tension measurements. 2. Viscosity measurements. 3. Kinetics Study	Mrigendu Midya	2	20	2	60
		Qualitative study of Acid and Basic Radicals	Minakshi Maity			2	
SEM III	C5T (Physical Chemistry)	1. Viscosity 2. Chemical Equilibrium 3. Partial properties and Chemical Potential	Mrigendu Midya	4	55 (T-40, CA - 5, CIA - 10)	2	25
		1. Conductance and transport number. 2. Fick's law 3. Foundation of Quantum Mechanics.	Ribhu Maity			2	35
	C5P (Physical Chemistry lab)	1. Viscosity measurements. 2. Determination of Partition Coefficient. 3. Determination of equilibrium constant using partition coefficient.	Mrigendu Midya	2	20	2	
		1. Conductometric titration. 2. Study of saponification. 3. Verification of Ostwald's dilution law.	Ribhu Maity			2	60
	C6T (Inorganic Chemistry)	Chemical Bonding -I	Minakshi Maity	4	55 (T-40, CA - 5, CIA - 10)	2	24
		1. Chemical Bonding -II. 2.	Dr. Narottam Sutradhar			2	36

		Radioactivity					
	C6P (Inorganic Chemistry lab)	1. Iodimetric Titrations . 2. Estimation of metal content in some selective samples (Brass, Steel, Cement)	Minakshi Maity	2	20	4	60
	C7T (Organic Chemistry)	1. Chemistry of alkenes and alkynes. 2. Aromatic Substitution.	Goutam Kumar Jana	4	55 (T-40, CA -5, CIA -10)	2	25
		1. Carbonyl and Related Compounds 2. Organometallics	Dr. Bidhan Chandra Samanta			2	35
	C7P (Organic Chemistry lab)	Qualitative analysis of single solid organic compounds	Dr. Bidhan Chandra Samanta	2	20	4	60
	SEC1T	1. Drugs and Pharmaceuticals. 2. Fermentation.	Dr. Bidhan Chandra Samanta	2	50 (T-25, P-15, CA -5, CIA -5)	2	30
	SEC1P	1. Preparation of Aspirin and its analysis. 2. Preparation of magnesium bisilicate .	Dr. Bidhan Chandra Samanta			2	30
	GE -3T	Chemical Energetics	Ribhu Maity	4	55 (T-40, CA -5, CIA -10)	1	14
		1. Chemical Equilibrium. 2. Ionic Equilibria .	Mrigendu Midya			1	16
		1. Aromatic Hydrocarbons 2. Organometallic Compounds 3. Aryl Halides 4. Alcohols, phenols, ether 5. Carbonyl Compounds.	Dr. Bidhan Chandra Samanta & Goutam Kumar Jana			1	30
	GE-3P	1. Determination of heat capacity of Calorimeter for different volumes. 2. Determination of enthalpy of ionization. 3. Determination of enthalpy of neutralization.	Ribhu Maity	2	20	2	60
		1. Find the PH of an unknown buffer solution. 2. Study of the	Mrigendu Midya			2	

		solubility of benzoic acid in water.					
SEM - IV	C8T (Physical Chemistry)	1. Electromotive Force. 2. Quantum Chemistry.	Ribhu Maity	4	55 (T-40, CA - 5, CIA - 10)	2	36
		1. Colligative Properties 2. Phase rule 3. Binary solutions. 4. Ionic equilibria.	Mrigendu Midya			2	24
	C.8P (Physical Chemistry lab)	1. Determination of solubility of sparingly soluble salt in water. 2. Determination of solubility product .3. Effect of ionic strength on the rate of Persulphate – Iodide reaction.	Ribhu Maity	2	20	2	60
		1. Potentiometric titration of Mohr's salt . 2. Study of phenol – Water phase diagram. 3. PH - metric titration of acid against base.	Mrigendu Midya			2	
	C.9T (Inorganic Chemistry)	1. General Principle of Metallurgy 2. Inorganic Polymers 3. Coordination Chemistry – 1.	Dr. Narottam Sutradhar	4	55 (T-40, CA - 5, CIA - 10)	2	36
		1. Chemistry of s and p Block elements .2. Nobel Gases .	Minakshi Maity			2	24
	C9P (Inorganic Chemistry lab)	1.Complexometric titration 2.Inorganic Preparation	Dr. Narottam Sutradhar	2	20	4	60
	C10T (Organic Chemistry)	1.Nitrogens Compound 2.Rearrangements	Goutam Kumar Jana	4	55 (T-40, CA - 5, CIA - 10)	2	36
		1.Organic Synthesis 2.Organic Spectroscopy	Dr. Bidhan Chandra Samanta			2	24
	C10P (Organic Chemistry lab)	Quantitative Estimations	Dr. Bidhan Chandra Samanta	2	20	4	60
	SEC -2T	Pesticides Chemistry	Dr. Bidhan Chandra	2	50 (T-25,	2	30

			Samanta		P-15, CA -5, CIA -5		
	SEC -2P	Determination of PH, acidity, alkalinity, ion exchange capacity. TLC, ion exchange paper chromatography method, Complexometric titration. Or Preparation	Dr. Bidhan Chandra Samanta			2	30
	GE4T	Solutions and Phase equilibrium	Mrigendu Midya	4	55 (T-40, CA -5, CIA -10)	1	18
Conductance and Electrochemistry		Ribhu Maity	1			12	
Analytical and Environmental Chemistry		Goutam Kumar Jana	1			30	
	GE4 P	Distribution law , Phase equilibria	Mrigendu Midya	2		2	60
		Conductance , Potentiometry titration	Ribhu Maity			2	
SEM - V	C11T (Inorganic Chemistry)	Coordination Chemistry-II	Dr. Narottam Sutradhar	4	55 (T-40, CA -5, CIA -10)	2	36
		Chemistry of d- and f- block elements	Minakshi Maity			2	24
	C11P (Inorganic Chemistry lab)	Chromatography of metal ions, Gravimetry and spectrophotometric method.	Dr. Narottam Sutradhar	2	20	4	60
	C12T (Organic Chemistry)	Carbocycles and Heterocycles , Cyclic Stereochemistry ,Pericyclic reactions	Dr. Bidhan Chandra Samanta	4	55 (T-40, CA -5, CIA -10)	2	36
		Carbohydrates , Bio-molecules	Goutam Kumar Jana			2	24
	C12P (Organic Chemistry lab)	Chromatographic Separations ,Spectroscopic Analysis of Organic Compounds	Dr. Bidhan Chandra Samanta	2	20	4	60
	DSE-1T	Crystal Structure , Polymers	Mrigendu Midya	4	55 (T-40, CA -5, CIA -10)	2	24
		Statistical Thermodynamics	Ribhu Maity			2	36
DSE-1P	Computer programs based on numerical methods	Ribhu Maity	2	20	4	60	
DSE-2T	Analytical Methods in Chemistry	Dr. Bidhan Chandra Samanta	4	55 (T-40, CA -5, CIA -	2	60	

		Or Instrumental Methods of Chemical Analysis			10)		
	DSE-2P	Separation Techniques , Solvent Extractions , Spectrophotometry Or Instrumental Methods of Chemical Analysis	Dr. Bidhan Chandra Samanta			4	60
SEM- VI	C13T (Inorganic Chemistry)	Bioinorganic Chemistry , Reaction Kinetics and Mechanism	Dr. Narottam Sutradhar	4	55 (T- 40, CA - 5, CIA - 10)	2	36
		Organometallic Chemistry	Minakshi Maity			2	24
	C13P (Inorganic Chemistry lab	Qualitative Analysis	Dr. Narottam Sutradhar	2	20	4	60
	C14T (Physical Chemistry)	Molecular Spectroscopy , Surface phenomenon	Ribhu Maity	4	55 (T- 40, CA - 5, CIA - 10)	2	36
		Photochemistry	Mrigendu Midya			2	24
	C14P (physical Chemistry lab)	Determination of surface tension and CMC	Mrigendu Midya	2	20	2	60
		Verification of Beer and Lambert's Law , Study of kinetics of K ₂ S ₂ O ₈ + KI reaction , Determination of pH of unknown buffer and CMC spectrophotometrical ly	Ribhu Maity			2	
	DSE3T	Inorganic Materials of Industrial Importance	Dr. Bidhan Chandra Samanta	4	55 (T- 40, CA - 5, CIA - 10)	4	60
	DSE3P	1. Determination of free acidity in ammonium sulphate fertilizer. 2. Estimation of Calcium in Calcium ammonium nitrate fertilizer. 3. Estimation of phosphoric acid in	Dr. Bidhan Chandra Samanta	2	20	4	60

		<p>superphosphate fertilizer.</p> <p>4. Electrolysis metallic coatings on ceramic and plastic material.</p> <p>5. Determination of composition of dolomite (by complexometric titration).</p> <p>6. Analysis of (Cu, Ni); (Cu, Zn) in alloy or synthetic samples.</p> <p>7. Analysis of Cement.</p> <p>8. Preparation of pigment (zinc oxide).</p>					
	DSE4T	Polymer Chemistry	Mrigendu Midya & Ribhu Maity	4	55 (T-40, CA - 5, CIA - 10)	4	60
	DSE4P	Polymer characterization, Polymer analysis.	Dr. Bidhan Chandra Samanta	2	20	4	60


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