

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2023- April 2024

Department : CHEMISTRY
Name/s of the Faculty : Dr. Mary N.L. and Dr. Mary George
Course Title : ORGANIC CHEMISTRY-II
Course Code : 19CH/MC/OC44
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 22 – 23, 2023 1 hr 1hr	Carboxylic Acids and their Derivatives (15 hrs) 2.1 Nomenclature and Classification of Aliphatic and Aromatic mono carboxylic Acids, Preparation and Reactions Unit 1 Alcohols, Phenols and Ethers 1.1 Aliphatic Alcohols: Reactions with reference to C-OH Bond Cleavage and O-H Bond Cleavage.	Lecture & Discussion	Morrison .R.T. Boyd R.N & Bhattacharjee.S.K . <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012. Bahl.A. & Bahl.S. <i>Advanced Organic Chemistry</i> , S. Chand Publishing Co., New Delhi, 2016	Short answer Test & Discussion
Nov 24-30, 2023 3 hrs 2 hrs	2.1 Acidity (Effect of Substituents on Acidity) and Salt formation, mechanism of Reduction and substitution in Alkyl or Aryl Group Di and Trihydric Alcohols, Action of HIO ₄ , Uses 1.1	Lecture	Peter Sykes., (1991), <i>A Guide Book to mechanism in Organic Chemistry</i> , Orient Longman Ltd., New Delhi. Sachin Kumar Ghosh, <i>Advanced General Organic Chemistry (A Modern Approach) (Set I & II)</i> , 3 rd Edition, New General Book Agency, Kolkata, 2010.	Short answer Test on Reaction mechanisms

Dec 1-7, 2023 3 hrs 2 hrs	2.2 Preparation and Properties of Unsaturated Carboxylic acids- Acrylic, Crotonic and Cinnamic acids. 1.2 Phenols: Nomenclature, Acidity of Phenols- Effects of Substituents	Lecture & Discussion	Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Peter Sykes., (1991), A Guide Book to mechanism in Organic Chemistry, Orient Longman Ltd., New Delhi.	MCQ Unassessed test
Dec 8-9, 2023 1 hr 1 hr	2.2 Preparation and Properties of Dicarboxylic Acids - Oxalic, Malonic, Succinic, Glutaric, Adipic and Phthalic Acids 1.2 Comparison of Acidity with Alcohols, Hydrogen Bonding	Lecture & Discussion	Sachin Kumar Ghosh, Advanced General Organic Chemistry (A Modern Approach) (Set I & II), 3 rd Edition, New General Book Agency, Kolkata, 2010. Morrison .R.T. Boyd R.N & Bhattacharjee.S.K . <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	Short answer test
Dec 11-15, 2023 3 hrs 2 hrs	2.3 Action of heat on α,β,γ -Hydroxy and Amino carboxylic acids. Stereospecific addition reaction of Maleic and Fumaric acids 1.3 Reactions: Acid Character, Ether Formation, Ester Formation 1.4 Reactions of Ethers and Epoxides Cleavage of Ether Linkages by HI	Lecture & Discussion	Morrison .R.T. Boyd R.N & Bhattacharjee.S.K . <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012. M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar- Delhi	

Dec 16 – 22, 2023 3 Hrs 2 hrs	2.4 Preparation and Reactions of Acid Chlorides, Acid Anhydrides, Amides and Esters. Acid and Alkaline Hydrolysis of Esters. Trans-Esterification 1.3 Reactions involving Benzene Ring- Nitration, Sulphonation, Halogenation, Nitrosation, Friedel –Crafts reaction, Coupling reactions, Kolbe’s and Riemer-Tiemenn reactions	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar- Delhi Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016	Quiz Unit 2.1-2.4 20 marks
Jan 3 – 6, 2024 1 hr	1.4 Reactions of Ethers and Epoxides. Cleavage of Ether Linkages by HI- Ziesels method of estimation of methoxy group.	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar- Delhi Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016	Short answer test MCQ Test Unit 1.1-1.4 20 marks
Jan 8 – 12, 2024	C.A. Test – I Unit 1 & 2			
Jan 13, 2024 3 hrs 2 hrs	Unit 4 Synthesis involving Active Methylene Group 4.1 Malonic and Acetoacetic Esters:; Nitro and Amino Compound 3.1 Aliphatic and Aromatic Nitro Compounds- Classification, general properties and preparation by nitration. Nitro Alkanes – Tautomerism and reactions- Distinction from alkyl nitrite	Lecture & Discussion	P.L.Soni & H.M.Chawla, (2010) Textbook of Organic Chemistry, Sultan Chand & Sons, New Delhi M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar- Delhi Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	Short answer test

Jan 18 -20, 2024 2 hrs. 1 hr	4.1 Characteristic Reactions of Active Methylene group 3.2 Aromatic Nitro Compounds - Reduction Products of Nitrobenzene in Acidic, Neutral and Alkaline Media, Electrolytic Reduction	Lecture & Discussion	Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Graham Solomons & Craig Fryhle, Organic Chemistry, John Wiley & Sons, 2000	Worksheet
Jan 22-29, 2024 3 hrs 2 hrs	4.1 Reactions of active methylene group and synthetic applications 3.3 Aliphatic and Aromatic Amines – Preparation, Reactions- Basicity of Amines,	Lecture & Discussion	P.L.Soni & H.M.Chawla, (2010) Textbook of Organic Chemistry, Sultan Chand & Sons, New Delhi Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	Worksheet
Jan 30 – Feb 2, 2024 3 hrs 2 hrs	4.2 Diazomethane and Diazoacetic Ester: Preparation, Structure and Synthetic Applications 3.3 Effect of substituents on basicity of amines.	Lecture & Discussion	Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	Seminar Quiz
Feb 3, 2024 1 hr	Unit 5 Colors and Dyes 5.1 Complementary Colors and Photochemistry of Vision	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> .	Seminar

			Pearson, Dorling Kindersley, 2012.	
Feb 5- 6, 2024 1 hr	5.2 Classification of Dyes Based on Chemical Structure and Application	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi	Seminar
1 hr	3.3 Separation of Mixture of Amines by Hinsberg and Hofmann method		Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	quiz
Feb 7 – 14, 2024 3 hrs	5.3 Preparation and uses of Azo Dye	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi	Seminar
2 hrs	3.4 Distinguishing primary, secondary and tertiary amines.		Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012	quiz
Feb 15 – 22, 2024	5.3 Preparation and uses of Methyl Orange	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi	Seminar
	3.4 Ascent and descent of series in aliphatic amines		Bahl.A. & Bahl.S. Advanced Organic	

			<p>Chemistry, S. Chand Publishing Co., New Delhi, 2016</p> <p>Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i>. Pearson, Dorling Kindersley, 2012</p>	quiz
Feb 23 – 24, 2024	5.3Preparation and uses of Bismark Brown	Lecture & Discussion	<p>M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi</p> <p>Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016</p> <p>Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i>. Pearson, Dorling Kindersley, 2012</p>	Seminar worksheet
Feb 26 – Mar 1, 2024	5.3Preparation and uses of crystal violet 3.5 DiazoniumSalts-Preparation and reactions	Lecture & Discussion	<p>M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi</p> <p>Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016</p> <p>Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i>. Pearson, Dorling Kindersley, 2012</p>	Seminar Presentation -10 marks worksheet

Mar 2, 2024 1 hr	5.3 Triphenyl Methane Dye - Malachite Green	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012	Quiz
Mar 4 –8, 2024	C.A. Test - II			
Mar 9 – 16, 2024 3 hr 2 hrs	.5.3 Phthalein Dye - Phenolphthalein and Fluorescein 3.5 Diazonium Salts Replacement reactions (Sandmeyer, Gatterman and Gomberg reactions)	Lecture & Discussion	M.K.Jain & S.C. Sharma Modern Organic Chemistry, Vishal Publishing Co., Jalandhar-Delhi Bahl.A. & Bahl.S. Advanced Organic Chemistry, S. Chand Publishing Co., New Delhi, 2016 Morrison .R.T. Boyd R.N & Bhattacharjee.S.K. <i>Organic Chemistry</i> . Pearson, Dorling Kindersley, 2012.	Seminar quiz

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2023– April 2024

Department : CHEMISTRY
Name/s of the Faculty : Dr.MARY GEORGE
Course Title : FUNDAMENTALS OF BIOCHEMISTRY - II
Course Code : 19CH/AC/FB43
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 22 – 23, 2023 2 hrs	Unit 1: Lipids 1.1 Classification of Lipids and Fats 1.2 Definitions and Significance of Iodine Value, Acid Value, Saponification Value, RM Value, Acetyl Value	Lecture and Discussion	Text Book 1) Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi. 2) Yesodha Doraiswamy, Swaminathan Geetha and V. Radhakrishnan, (1997), Allied Biochemistry, Margham Publications.	Definition Test
Nov 24-30, 2023 3 hrs	1.3 Digestion and Absorption of Lipids 1.4 Lipid Metabolism - Oxidation of Fatty Acids, Biosynthesis of Fatty Acids, Ketone bodies, Ketosis	Lecture and Discussion	<i>Lehninger</i> A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi. Satyanarayana, U., Biochemistry, 2nd ed., Kolkata: Books and allied, 2005	Detailed answer test
Dec 1-7, 2023 3 hrs	1.4 Risk factor of HDL, LDL and total cholesterol in the body	Lecture and Discussion	Stryer Lubert (2007), Biochemistry, W. H. Freeman and Co., New York 2) Burton E. Tropp, Biochemistry – Concepts and applications, New York. BrooksCole Publishing Co., 1997. Satyanarayana, U., Biochemistry, 2nd ed., Kolkata: Books and allied, 2005	Detailed answer test

Dec 8-9, 2023 3 hrs	Unit 2: Proteins 2.1 Amino Acids - Classification based on R Groups and based on their Metabolism 2.2 Chemical Reactions of Amino Acids - with Mineral Acid, Formaldehyde, FDNB and CO ₂ , Ninhydrin Test, Action of Heat on α , β and γ - Aminoacids	Lecture and Discussion	Berry, A.K. (2001), Text book of Biochemistry, Emkay Publications. Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi. Stryer Lubert (2007), Biochemistry, W. H. Freeman and Co., New York	III component Unit 1.1-1.2 and unit 2.1 and 2.2 MCQ (20 Marks)
Dec 11-15, 2023 3 hrs	2.3 Peptide Bond, Primary, Secondary and Tertiary Structure of Proteins. Ramachandran Plot. Properties of Proteins - Denaturation, Amphoteric Nature, Ion Binding Capacity, Solubility	Lecture and Discussion	Berry, A.K. (2001), Text book of Biochemistry, Emkay Publications. Satyanarayana, U., Biochemistry, 2nd ed., Kolkata: Books and allied, 2005	Detailed answer test
Dec 16 – 22, 2023 , 2022 3 hrs	2.4 Classification of Proteins based on Shape, Composition and Solubility	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi	MCQ
Jan 3 – 6, 2024 3 hrs	2.5 Digestion and Absorption of Proteins and Protein Metabolism, Transamination, Oxidative Deamination and Urea Cycle	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi	quiz
Jan 8 – 12, 2024	C.A. Test Unit 1, 2			
Jan 13, 2024 1hr	Unit 3: Hormones 3.1 Definition, Classification of Hormones (Steroid and Non-Steroid Only)	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test

Jan 18 -20, 2024 1 hr	3.2 Mechanism of Hormone Action	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Satyanarayana, U., Biochemistry, 2nd ed., Kolkata: Books and allied, 2005	Short answer test
Jan 22-29, 2024 3 hrs	3.3 Functions of Insulin and Thyroxin		Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi Satyanarayana, U., Biochemistry, 2nd ed., Kolkata: Books and allied, 2005	Detailed Answer Test
Jan 30 – Feb 2, 2024	4.3 DNA as Genetic Material, DNA Replication	Lecture and Discussion	Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	III component Unit 3.3 and Unit 4.1-4.3 MCQ Test(20 marks)
Feb 3, 2024 1 hr	4.3 Protein Synthesis	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test
Feb 5- 6, 2024 1 hr	4.4 Comparison of DNA and RNA with reference to Occurrence, Composition, Structure and Functions	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test

Feb 7 – 14, 2024 3 hrs	4.4, Structure and Functions DNA and RNA	Lecture and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test
Feb 15 – 22, 2024 3 hrs	5.1 Centrifugation – Principle and applications of sedimentation and Ultracentrifugation	Demonstration and Discussion	Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test
Feb 23 – 24, 2024 2 hrs	5.1– Principle and applications of Ultracentrifugation	Demonstration and Discussion	Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005	Short answer test
Feb 26 – Mar 1, 2024	5.2 Electrophoresis – Principle working and applications of SDS-PAGE 5.3 Chromatography – Principle and applications of Thin layer (TLC)	Demonstration and Discussion	Lehninger A. L (2006), Principles of Biochemistry, CBS Publishers, New Delhi Satyanarayana, U., <i>Biochemistry</i> , 2nd ed., Kolkata: Books and allied, 2005 Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Dushyant Kumar Sharma. <i>Biochemistry</i> . Alpha Science, 2009	III Component Assignment (Unit 5) 10 marks
Mar 2, 2024 1 hr	Revision			
Mar 4 –8, 2024	CA Test –II Unit 3, 4			
Mar 9 – 16, 2024	5.4 High Performance	Demonstration	Jain J. L. (2007), Fundamentals of	Short answer test

3 hrs	Liquid Chromatography (HPLC)	and Discussion	Biochemistry, S. Chand and Co., New Delhi Dushyant Kumar Sharma. <i>Biochemistry</i> . Alpha Science, 2009	
Mar 18 - 19, 2024 1 hr	5.4 High Performance Liquid Chromatography (HPLC)(contd)	Demonstration and Discussion	Jain J. L. (2007), Fundamentals of Biochemistry, S. Chand and Co., New Delhi Dushyant Kumar Sharma. <i>Biochemistry</i> . Alpha Science, 2009	Short answer test
Mar 20-22, 2024 2 hrs	REVISION			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2023– April 2024

Department : CHEMISTRY
Name/s of the Faculty : Dr. AVILA JOSEPHINE B
Course Title : FUNDAMENTALS OF CHEMISTRY - II
Course Code : 19CH/AC/FC43
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 22 – 23, 2023 2 hrs	Mole concept 1.1 Definition of mole and applications of mole concept in stoichiometry	Lecture and Discussion	Puri, B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry</i> . New Delhi: Vishal, 2018. Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017.	Problem solving
Nov 24-30, 2023 3 hrs	1.2 Equivalent weight – calculation of equivalent weight of oxidants and reductants in redox reactions, acids and bases, molecular volume	Lecture and Discussion	Puri, B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry</i> . New Delhi: Vishal, 2018. Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017. Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018 Gopalan.R and Ramalingam.V <i>Concise Coordination Chemistry</i> , New Delhi, Vikas Publishing 2011	Problem solving
Dec 1-7, 2023 3 hrs	1.3 Concentration terms used to express strength of solutions- Normality, Molarity, Mole fraction and	Lecture and Discussion	Puri, B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry</i> . New Delhi:	Worksheet

	Molality, ppm and ppb		Vishal, 2018. Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017. Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018 Skoog , Douglas, West, Donald , Holler. James and Crouch, Stanley, Fundamentals of Analytical Chemistry, 9 th Edition, Cengage Technology Edition, 2013	
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Dec 8-9, 2023 3 hrs	2.1 Definition of specific, equivalent & molar conductance, effect of dilution on Conductance 2.2 Ostwald dilution law, Kohlrausch's law –applications	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry.</i> New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008.	III component Unit 1.1-.1.2 and unit 2.1 and 2.2 MCQ (20 Marks)
Dec 11-15, 2023 3 hrs	2.3 Conductometric titration –principle and types 2.4 Electrochemical cells-definition, representation of cells and cell reactions	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry.</i> New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008	Short answer test
Dec 16 – 22, 2023 3 hrs	2.4 Types of electrodes-standard hydrogen and calomel electrodes, Nernst equation significance, standard electrode potential and its measurement, electrochemical series-applications	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry.</i> New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008	MCQ
Jan 3 – 6, 2024 3 hrs	2.5 Commercial cells – Primary and Secondary cells, Fuel cells- Hydrogen-Oxygen, Batteries- Lead storage battery, Nickel-Cadmium battery	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry.</i> New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008	Short answer test
Jan 8 – 12, 2024	C.A. Test Unit 1, 2			
Jan 13, 2024 1hr	3.1 Definitions - Phase, component and degree of freedom, Derivation of phase rule.	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry.</i> New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill	Short answer test

			& Co., 5 th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S. Chand &Co.2018	
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Jan 18 -20, 2024 1 hr	32 Application of phase rule to one component systems (water and carbon dioxide)	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry</i> . New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018	Worksheet
Jan 22-29, 2024 3 hrs	3.3Two component systems: simple eutectic (Pb-Ag) and (Bi-Cd)	Lecture and Discussion	Puri,B.R., L.R. Sharma., Madan S. Pathania. <i>Principles of Physical Chemistry</i> . New Delhi: Vishal, 2018 Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018	Worksheet Detailed answer test
Jan 30 – Feb 2, 2024 2 hrs	Coordination Chemistry 4.1 Coordination complexes- definition, types of ligand, IUPAC nomenclature of simple mononuclear complexes	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017	Short answer test
Feb 3, 2024 1 hr	4.2 Isomerism- Structural- ionisation, linkage, ligand, coordination and hydrate isomerism	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017	Short answer test

Feb 5- 6, 2024 1 hr	4.2 Stereoisomerism-geometrical and optical isomerism of four coordinated complexes.	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone, 2017	Short answer test
Feb 7 – 14, 2024 3 hrs	4.3 Pauling theory (VBT)-geometry of complexes based on hybridization (coordination number 4 and 6) magnetic moment of complexes	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone 2017	III component Unit 4.1-4.3 MCQ Test(20 marks)
Feb 15 – 22, 2024 3 hrs	4.4 Biological coordination compounds- structural features (figurative representation only), functions of Haemoglobin and Vitamin B ₁₂	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone 2017	Short answer test
Feb 15 – 22, 2024 3 hrs	4.4 Biological coordination compounds- structural features (figurative representation only), functions of Vitamin B ₁₂	Lecture and Discussion	Gopalan.R and Ramalingam.V Concise Coordination Chemistry, New Delhi, Vikas Publishing 2011 Puri B.R, Sharma L.R & Kalia K.C. <i>Principles of Inorganic Chemistry</i> . New Delhi: Milestone 2017	Short answer test
Feb 23 – 24, 2024 1 hr	5.1 TGA and DTA- Principle, Instrumentation, methods of obtaining Thermograms	Lecture and Discussion	Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5 th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018	Short answer test

			Skoog , Douglas, West, Donald , Holler. James and Crouch, Stanley, Fundamentals of Analytical Chemistry, 9 th Edition, Cengage Technology Edition, 2013	
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Feb 26 – Mar 1, 2024 3 hrs	5.1 factors affecting TGA/DTA	Lecture and Discussion	Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018 Skoog , Douglas, West, Donald , Holler. James and Crouch, Stanley, <i>Fundamentals of Analytical Chemistry</i> , 9th Edition, Cengage Technology Edition, 2013	III Component Assignment (Unit 5& Unit 4.4) 10 marks
Mar 2, 2024 1 hr	Revision			
Mar 4 –8, 2024	CA Test –II Unit 3, 4			
Mar 9 – 16, 2024 3 hrs	5 Thermal analysis of silver nitrate, calcium oxalate and calcium acetate	Lecture and Discussion	Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018 Skoog , Douglas, West, Donald , Holler. James and Crouch, Stanley, <i>Fundamentals of Analytical Chemistry</i> , 9th Edition, Cengage Technology Edition, 2013	Short answer test
Mar 18 - 19, 2024 1 hr	5.2 DSC- Principle, Instrumentation and applications	Lecture and Discussion	Barrow, Gordon, M., <i>Physical Chemistry</i> , McGraw Hill & Co., 5th Ed., 2008 Bahl, Arun , Bahl. B.S and Tuli, J.D , <i>Essentials of Physical Chemistry</i> , New Delhi, S.Chand & Co., 2018 Skoog , Douglas, West, Donald , Holler. James and Crouch, Stanley, <i>Fundamentals of</i>	Short answer test

			Analytical Chemistry, 9 th Edition, Cengage Technology Edition, 2013	
Mar 20-22, 2024 2 hrs	REVISION			