Commecs College
Macro Plan 2025 – 26

Subject: Chemistry
Class : XI (Pre-Engineering & Pre- Medical)

MID- TERM							
Week No.	**Start Date**	**End Date**	**Working days**	**Teaching days**	**Topic/Chapter**	**Contents**	**Objectives** By the end of the unit S.W.A.T.:
1	Fri, Aug 01	Fri, Aug 08	06	07	**Foundation course**	**Basic Concepts** 1. Introduction of chemistry and periodic Table 2. Atoms, elements, molecules & compounds 3. Ions, valancy and compound formation 4. Atomic number, Atomic mass and molecular mass.	**To refresh essential prior knowledge** 1. Define chemistry and explain periodic Table 2. Define Atoms, elements, molecules & compounds with particular example. 3. Define Ions, valancy and compound formation with numeric example. 4. Define Atomic number, Atomic mass and molecular mass with numerical. 5. Foundation Quiz
2	Mon, Aug 11	Fri, Aug 15	04	04	**CHAPTER 01** Stoichiometry	**CHAPTER 01** 1. Moles and Avogadro's number. 2. Rules for rounding off data.	**CHAPTER 01** 1. Define Moles and Avogadro's number. 2. Define and apply rules of Rounding off
3	Mon, Aug 18	Sat, Aug 23	06	06	**CHAPTER 01** Stoichiometry	**CHAPTER 01** 3. Use of Exponents 4. Stoichiometry (Mass-Mass) (Mass-Volume) (Volume Volume	**CHAPTER 01** 3. Use of exponents 4. Define and solve Numerical related to relationship of Mass-Mass
4	Mon, Aug 25	Sat, Aug 30	06	06	**CHAPTER 01** Stoichiometry	**CHAPTER 01** 5. Stoichiometry (Mass Volume) (Volume-Volume) Limiting Reactant 6. Theoretical , practical and percent yield	**CHAPTER 01** 5. Define and solve Numerical relationship of Mass-Volume and Volume- Volume relationship 6. To recognize the Limiting reactant and Solve the problems of Limiting reactant. 7. Theoretical, practical and percent yield .

Commecs College

Macro Plan 2025 – 26

Subject: Chemistry

Class : XI (Pre-Engineering & Pre- Medical)

5	Mon, Sep 1	Fri, Sep 5	04	05	**CHAPTER 02** Atomic Structure	**CHAPTER 02** 1. Introduction of atom 2. Subatomic particles and their characteristics 3. Applications of Bohr's Atomic Theory 4. Derivation of radius, energy, Frequency and wave number	**CHAPTER 02** 1. Introduction to history of atom 2. Differentiate between Subatomic particles and their characteristics 3. Applications of Bohr's Atomic theory 4. Derivation of radius, energy, Frequency and wave number and solve related Numerical
6	Mon, Sep 8	Sat, Sep 13	06	06	**CHAPTER 02** Atomic Structure	5. Defects of Bohr's Theory 6. Spectrum and Types of Spectrum 7. Hydrogen Spectrum 8. Plank's quantum Theory 9. X-Rays (Types, production, properties and uses)	5. Write Defects of Bohr's Theory 6. Define Spectrum and Differentiate between types of spectrums 7. Write series of spectral lines in hydrogen Spectrum and calculate the wave no. of each series 8. Write postulates of Plank's quantum Theory 9. Define X-rays, describe production, properties and uses of x-rays.
7	Mon, Sep 15	Fri, Sep 19	05	05	**CHAPTER 02** Atomic Structure	**CHAPTER 02** 10. Radioactivity 11. Quantum numbers and orbitals 12. Shapes of Orbitals 13. Electronic Configuration (Aufbau) 14. Electronic Configuration (Pauli, n+l and Hund's Rule)	**CHAPTER 02** 10. Define the phenomenon of radioactivity and differentiate between the types of radioactive rays. 11. Define and differentiate between types of Quantum numbers 12. Differentiate between Shapes of Orbitals 13. Write Electronic Configuration and State rules of electronic configuration 14. Write Electronic Configuration and State rules of electronic configuration

Commecs College
Macro Plan 2025 – 26

Subject: Chemistry
Class : XI (Pre-Engineering & Pre- Medical)

8	Mon, Sep 22	Sat, Sep 27	06	06	**CHAPTER 03** Theories of Covalent bonding & shapes of molecules	**CHAPTER 03** 1. Introduction to Bonding 2. Theories of Covalent bond VBT (Sigma, Pi bond ,Strength of bond in term of VBT and Limitation of VBT) 3. MOT (Characteristic of bonding and Anti bonding) 4. Shapes of Molecules VSEPRT (postulates and prediction of shape) **QUIZ WEEK**	**CHAPTER 03** 1. Introduction to Bonding 2. Describe different Theories of Covalent bond. VBT (Sigma, Pi bond ,Strength of bond in term of VBT and Limitation of VBT) 3. Draw MOT diagram (Characteristic of bonding and Anti bonding) 4. Predict the Shapes of Molecules VSEPRT (postulates and prediction of shape)
09	Mon, Sep 29	Fri, Oct 3	05	06	**CHAPTER 03** Theories of Covalent bonding & shapes of molecules	**CHAPTER 03** 5. Shapes of Molecules VSEPRT (postulates and prediction of shape) 6. Hybridization 7. Bond characteristics (Bond energy, Bond length, Ionic character of Covalent bond, Dipole moment) 7.Effect of bonding on physical and chemical properties	**CHAPTER 03** 5. Predict the Shapes of Molecules VSEPRT (postulates and prediction of shape) 6. Draw Hybrid orbital diagram of Methane ethene and ethyne 7. Define Bond characteristics (Bond energy, Bond length, Ionic character of Covalent bond, Dipole moment 8. Effect of bonding on physical and chemical properties

Commecs College

Macro Plan 2025 – 26

Subject: Chemistry

Class : XI (Pre-Engineering & Pre- Medical)

10	Mon, Oct 06	Sat, Oct 11	06	06	**CHAPTER 04** State of Matter: Gases	**CHAPTER 04** 1. Introduction of states of matter 2. Kinetic molecular Theory of Gases 3. Pressure and its units and Atmospheric pressure and its effect on weather 4. Absolute temperature and Charle's Law. 5. Boyle's Law, Charles's law Avogadro's law	**CHAPTER 04** 1. Differentiate between state of matter 2. Write postulates of Kinetic molecular Theory of Gases 3. Convert Pressure units and write effects of atmospheric pressure on weather 4. Define Absolute temperature 5. State and explain Boyle's Law and Charles's law, Avogadro's law
11	Mon, Oct 13	Fri, Oct 17	05	06	**CHAPTER 04** State of Matter: Gases	**CHAPTER 04** 6. Ideal gas equation 7. Gas constant units 8. Deviation from Ideal gas Behavior 9. Van der waal's Equation	**CHAPTER 04** 6. Derive Ideal gas equation solve related Numericals 7.Calculate Gas constant in different units 8.Write causes of deviation of real gases from Ideal gas behavior
12	Mon, Oct 20	Sat, Oct 25	06	06	**CHAPTER 04** State of Matter: Gases	**CHAPTER 04** 10. Dalton's law of Partial Pressure 11. Graham's law of Diffusion and effusion 12. Liquefaction of Gases (Joule-Thomson Effect 13. Linde's Method of Liquefaction of gases 14. Plasma (4th state of matter)	**CHAPTER 04** 9. State and derive Dalton's law of Partial Pressure and solve related numerical 10. State and derive Graham's law of Diffusion and effusion and solve related numerical 11. Define Liquefaction of Gases and define (Joule-Thomson Effect) and uses of liquid air 12. Explain Linde's Method of Liquefaction of gases 13. Define Plasma (4th state of matter)

Commecs College
Macro Plan 2025 – 26

Subject: Chemistry
Class : XI (Pre-Engineering & Pre- Medical)

13	Mon, Oct 27	Fri, Oct 31	05	06	**Chapter 05** State of matter II: Liquids	**CHAPTER 05** 1. Kinetic Molecular theory (KMT) of Liquids 2. Properties of liquids 3. Intermolecular forces in Liquids 4. Physical properties of liquids **QUIZ WEEK**	**CHAPTER 05** 1.W postulates of KMT of Liquids 2. Compare different Properties of liquids 3. Differentiate between Intermolecular forces in Liquids(Dipole-dipole, Hydrogen bonding, London dispersion forces) 4. Define different Physical properties of liquids
14	Mon, Nov 03	Sat, Nov 08	06	01 05	**Chapter 05** State of matter II: Liquids **CHAPTER 06** State of matter II: Solids	**CHAPTER 05** 5. Energetic phase change 6. Liquid Crystals **CHAPTER 06** 1. Kinetic Molecular theory of Solids 2. Properties of crystalline solids 3. Types of crystalline solid 4. Crystal lattice 5. lattice Energy	**CHAPTER 05** 5. Define Energetic phase change (molar heat of fusion and vaporization) 6. Define Liquid Crystals and write uses **CHAPTER 06** 1. Write postulates of KMT of Solids 2. Differentiate between Properties of crystalline solids 3. Write different types of crystalline solids 4. Define Crystal lattice, unit cell, differentiate between types of close packing in metals 5. Define lattice Energy
15	Mon, Nov 10	Fri, Nov 14	05	06	**CHAPTER 07** Chemical Equilibrium	**CHAPTER 07** 1. Reversible reaction and Dynamic Equilibrium 2. Concept of Equilibrium 3. Law of Mass Action 4. Determination of Equilibrium Constant 5. Equilibrium Constant Numerical	**CHAPTER 07** 1. Define Reversible reaction and Dynamic Equilibrium 2. Define concept of Equilibrium 3. State and derive Law of Mass Action 4. Determine the Equilibrium Constant 5. Solve Numericals of Kc

Commecs College

Macro Plan 2025 – 26

Subject: Chemistry

Class : XI (Pre-Engineering & Pre- Medical)

16	Mon, Nov 17	Sat, Nov 22	06	06	**CHAPTER 07** Chemical Equilibrium	**CHAPTER 07** 6. Relation between Kc and Kp 7. Importance of Kc and reaction Quotient 8. Le-Chatelier Principle 9. Industrial Applications of Le-Chatelier's Principle 10. Solubility Product Numerical	**CHAPTER 07** 6. Relate between Kc and Kp 7. Write Importance of Kc and predict direction of equilibrium reaction and the extent of reaction 8. State Le-Chatelier Principle and write factors that affects chemical equilibrium 9. Write favorable conditions in Industrial applications of Le-Chatelier's Principle 10. Define Solubility Product solve Numerical
17	Mon, Nov 24	Sat, Nov 29	06	03	**CHAPTER 07** Chemical Equilibrium	11. Applications of Ksp 12. Common-Ion Effect	**11.** Write Applications of Ksp 12. Define Common-Ion Effect
				03	**Mid –Term Syllabus completed** **Revision** **QUIZ WEEK**		
18	Mon, Dec01	Fri, Dec 05	16		**Mid Term Exams (1st Dec– 16th Dec)**		
19	Mon, Dec08	Sat, Dec 13					
20	Mon, Dec15	Fri, Dec 19			**Sports Gala and Winter Break**		
21	Mon, Dec22	Sat, Dec 27					
Till Mid Term **Working Days – 109** **Teaching Days – 82 (61.65%)** **Classes Conducted = 99 (61.11%)**							

Commecs College
Macro Plan 2024 – 25

ect: Chemistry

FINAL- TERM							
Week No.	**Start Date**	**End Date**	**Working Days**	**Teaching Days**	**Topic/Chapter**	**Contents**	**Objectives** By the end of the unit S.W.A.T.:
22	Mon, Dec 29	Sat, Jan 03	03	02 01	**Winter Break** **PAPER DISCUSSION** **CHAPTER 09** Chemical Kinetics	**Winter Break** **PAPER DISCUSSION** **CHAPTER 09** 1. Rate and Velocity of Reaction. 2. Rate law & Rate Expression.	**Understand how to attempt paper properly and discuss answer key of Mid- term** **CHAPTER 09** 1. Define Rate and Velocity of Reaction 2. Define Rate law and write Rate Expression Define order of reaction and its types and determine order of reaction.
23	Mon, Jan 05	Sat, Jan 10	06	05	**CHAPTER 09** Chemical Kinetics	3. Order of Reaction and its determination Elementary and overall rate constant 4 Factors Affecting Rate of Reaction 5. Collision theory Transition state and Activation Energy Catalysis	3. Define order of reaction and its types and determine order of reaction. 4. Write reasons related to Factors affecting Rate of Reaction. 5. Collision theory Transition state and Activation Energy Catalysis

Commecs College
Macro Plan 2025 – 26

ect: Chemistry

24	Mon, Jan 12	Fri, Jan 16	05	06	**CHAPTER 08** Acids, Bases and salts	**CHAPTER 08** 1. Acidic, basic and Amphoteric 2. Lowry-Bronsted Theory of Acids and Bases Conjugate acid base pair 4. Strengths of Acids & bases (% dissociation,Kw, PH, POH & Pkw) 5. Leveling effect 6. Lewis Definition of Acids and Bases 7. Buffers solutions and their applications 8. Salts their types and Applications	**CHAPTER 08** 1. Define Acidic, basic and Amphoteric 2. Identify strength of acids and bases according to Lowry-Bronsted Theory of Acids & Bases 3. Identify Conjugate acid base pair 4. Identify Strengths of Acids & bases through different parameters 5. Define Leveling effect 6. Write Lewis Definition of Acids and Bases 7. Define Buffers solutions and write their applications Define Salts and their types and Applications

25	Mon, Jan 19	Fri, Jan 23	05	03 03	**CHAPTER 08** Acids, Bases and salts **CHAPTER 10** Solutions and Colloids	. Buffers solutions and their applications 8. Salts their types and Applications **CHAPTER 10** 1. General properties of solution 2. Solutions suspension & colloids 3. Concentration units	8. Define Buffers solutions and write their applications 9. Define Salts and their types ands Applications **CHAPTER 10** 1. Write general properties of solution 2. Differentiate between solutions, suspension and colloids 3. Write different Concentration units and solve related Numericals

Commecs College
Macro Plan 2024 – 25

ect: Chemistry

26	Mon, Jan 26	Sat, Jan 31	06	06	**CHAPTER 10** Solutions and Colloids	4. Raoult's Law 5.Colligative properties of solution 6.Colloids	4. State and derive Raoult's Law (Numericals) 5. Define Colligative properties of solution 6. Define Colloids and write its types and properties
27	Mon, Feb 02	Fri, Feb 06	03	04	**CHAPTER 11** Thermochemistry	**CHAPTER 11** 1. Introduction to thermodynamics (Thermodynamics terms) 2. Thermo chemical reactions 3. First law of Thermodynamics 4. Pressure volume work and Applications of Thermodynamics	**CHAPTER 11** 1. Introduction to thermodynamics (Thermodynamics terms) 2. Differentiate between Thermo chemical reactions 3. State First law of Thermodynamics 4. Derive Pressure volume work and Applications of Thermodynamics
28	Mon Feb 09	Sat, Feb 14	06	06	**CHAPTER 11** Thermochemistry	5. Hess's Law (Standard enthalpy of formation, enthalpy of reaction, Uses of Hess's Law. 5. Determination of Heat of reaction and heat of formation. 6. Determination of Heat of reaction and heat of formation.	6. 5. State and explain Hess's Law (Standard enthalpy of formation , enthalpy of reaction) 7. Uses of Hess's law in determination of heat of reaction & formation
29	Mon Feb 16	Fri, Feb 20	05	03 03	**CHAPTER 11** Thermochemistry **CHAPTER 12** Electrochemistry	6. Born Haber's Cycle 7. Numericals **CHAPTER 12** 1. Oxidation and Reduction 2. Oxidation number and Rules	8. Draw Born Haber's Cycle and determine lattice energy **CHAPTER 12** 1. Define Oxidation and Reduction 2. Define Oxidation number and write its Rules

Commecs College
Macro Plan 2025 – 26

ect: Chemistry

30	Mon, Feb 23	Sat, Feb 28	06	06	**CHAPTER 12** Electrochemistry	4. Balancing Redox Equation (Basic medium) 5. Electrodes, electrolytic cell & Electrochemical cell	CHAPTER 12 3. Balance Redox Equation 4. Define Electrodes, electrolytic cell & Electrochemical cell.
31	Mon, Mar 02	Fri, Mar 06	05	06	**CHAPTER 12** Electrochemistry	6. Electrode potential of Zn 7. Electrode potential of Cu 8. Electrochemical series	CHAPTER 12 5.Determine Electrode potential of Zn and Cu 6. Write features of Electrochemical series
32	Mon, Mar 09	Sat, Mar 14	05	05	**CHAPTER 12** Electrochemistry	8. Batteries 9. Corrosion and its prevention	7. Define Batteries its types 8. Define Corrosion and methods of its prevention
33	Mon, Mar 16	Fri, Mar 20	03	04	**Revision**		
34	Mon, Mar 23	Sat, Mar 28	05	**Preliminary Exams**			
35	Mon, Mar 30	Fri, Apr 03	05				
36	Mon, Apr 06	Sat, Apr 11	06				

Till Preliminary Exams
Total Working Days : 109 + 74 = 183
Total Teaching Days : 82 + 51 = 133 (100%)
Classes Conducted = 99+ 63 = 162 (100%)