

Lesson plan of ENGINEERING CHEMISTRY Theory of 1ST Sem Winter-2021

(From 01.11.2021 to 14.02.2022)

SL. NO	SECTION	WEEK	THEORY CHAPTER/TOPIC	PERIOD (Total:60 periods)
1	SEC-C SEC-D	01.11.2021 To 06.11.2021	<p>Chapter 1: Atomic structure : Fundamental particles (electron, proton & neutron Definition, mass and charge). Atomic mass and mass number, Definition, examples and properties of Isotopes, isobars and isotones. Rutherford's Atomic model (postulates and failure), Bohr's Atomic model (Postulates only), . Bohr's Atomic model (Postulates only), Bohr-Bury scheme, Aufbau's principle, Hund's rule, Electronic configuration (up to atomic no 30).</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	03-C 02-D 01(EXTRA CLASS)
2	SEC-C SEC-D	08.11.2021 To 13.11.2021	<p>Chapter 2 :Chemical Bonding : Definition , types (Electrovalent, Covalent and Coordinate bond with examples (formation of NaCl, MgCl₂, H₂, Cl₂, O₂, N₂, H₂O, CH₄, NH₃, NH₄⁺, SO₂).</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	04-C 04-D
3	SEC-C SEC-D	15.11.2021 To 20.11.2021	<p>Chapter 3 : Acid base theory : Concept of Arrhenius, Lowry Bronsted and Lewis theory for acid and base with examples (Postulates and limitations only). Neutralization of acid & base. Definition of Salt, Types of salts (Normal, acidic, basic, double, complex and mixed salts, definitions with 2 examples from each).</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)
4	SEC-C SEC-D	22.11.2021 To 27.11.2021	<p>Chapter 4:Solutions : Definitions of atomic weight, molecular weight, Equivalent weight. Determination of equivalent weight of Acid, Base and Salt. Modes of expression of the concentrations (Molarity , Normality & Molality) with Simple Problems. pH of solution (definition with simple numericals) Importance of pH in industry (sugar, textile, paper industries only)</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)

5	SEC-C SEC-D	29.11.2021 To 04.12.2021	<p>Chapter 5 : Electrochemistry : Definition and types (Strong & weak) of Electrolytes with example. Electrolysis (Principle& process) with example of NaCl (fused and aqueous solution). Faraday's 1st and 2nd law of Electrolysis (Statement, mathematical expression and Simple numerical) Industrial application of Electrolysis- Electroplating (Zinc only).Chapter 6 : Corrosion: Definition of Corrosion, Types of Corrosion- Atmospheric Corrosion, Waterline corrosion. Mechanism of rusting of Iron only. Protection from Corrosion by (i) Alloying and (ii) Galvanization.</p> <p>DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)
6	SEC-C SEC-D	06.12.2021 To 11.12.2021	<p>B. INORGANIC CHEMISTRY</p> <p>Chapter 7 :Metallurgy: Definition of Mineral, ores , gangue with example. Distinction between Ores And Minerals. General methods of extraction of metals, i) Ore Dressing ii) Concentration (Gravity separation, magnetic separation, Froth floatation & leaching).iii) Oxidation (Calcinations, Roasting) iv) Reduction (Smelting, Definition & examples of flux, slag) v) Refining of the metal (Electro refining, & Distillation only) Chapter 8 : Alloys: Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example. Composition and uses of Brass, Bronze, Alnico, Duralumin.</p> <p>DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)
7	SEC-C SEC-D	13.12.2021 To 18.12.2021	<p>C. ORGANIC CHEMISTRY</p> <p>Chapter 9 :Hydrocarbons : Saturated and Unsaturated Hydrocarbons (Definition with example) Aliphatic and Aromatic Hydrocarbons (Huckle's rule only). Difference between Aliphatic and aromatic hydrocarbons</p>	04-C 04-D
8	SEC-C SEC-D	20.12.2021 To 24.12.2021	<p>NOMENCLATURE OF ORGANIC COMPOUNDS,</p> <p>DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)

9	SEC-C SEC-D	27.12.2021 To 01.01.2022	<p style="text-align: center;">D. INDUSTRIAL CHEMISTRY</p> <p>Chapter 10 :Water Treatment : Sources of water, Soft water, Hard water, hardness, types of Hardness (temporary or carbonate and permanent or non-carbonate)Removal of hardness by lime soda method (hot lime & cold lime—Principle, process & advantages)</p>	<p style="text-align: center;">04-C 04-D 01(EXTRA CLASS)</p>
10	SEC-C SEC-D	03.01.2022 To 08.01.2022	<p>Advantages of Hot lime over cold lime process. Organic Ion exchange method (principle, process, and regeneration of exhausted resins)</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	<p style="text-align: center;">04-C 04-D 01(EXTRA CLASS)</p>
11	SEC-C SEC-D	10.01.2022 To 15.01.2022	<p>Chapter 11 : Lubricants: Definition of lubricant, Types (solid, liquid and semisolid with examples only) and specific uses of lubricants (Graphite, Oils, Grease), Purpose of lubrication.</p>	<p style="text-align: center;">04-C 04-D 01(EXTRA CLASS)</p>
12	SEC-C SEC-D	17.01.2022 To 22.01.2022	<p>Chapter 12 : Fuel: Definition and classification of fuel, Definition of calorific value of fuel, Choice of good fuel. Liquid: Diesel, Petrol, and Kerosene --- Composition and uses. Gaseous: Producer gas and Water gas (Composition and uses). Elementary idea about LPG, CNG and coal gas (Composition and uses only).</p> <p style="text-align: center;">DOUBT CLEARING CLASS</p>	<p style="text-align: center;">04-C 04-D 01(EXTRA CLASS)</p>

13	SEC-C SEC-D	24.01.2022 To 29.01.2022	<p>Chapter 13 : Polymer: Definition of Monomer, Polymer, Homo-polymer, Co-polymer and Degree of polymerization. Difference between Thermosetting and Thermoplastic, Composition and uses of Polythene, & Poly-Vinyl Chloride and Bakelite.</p> <p>DOUBT CLEARING CLASS</p>	03-C 04-D 01(EXTRA CLASS)
14	SEC-C SEC-D	31.01.2022 To 04.02.2022	<p>Definition of Elastomer (Rubber). Natural Rubber (it's draw backs). Vulcanisation of Rubber. Advantages of Vulcanised rubber over raw rubber.</p> <p>Chapter 14: Chemicals in Agriculture: Pesticides: Insecticides, herbicides, fungicides- Examples and uses. Bio Fertilizers: Definition, examples and uses.</p> <p>DOUBT CLEARING CLASS</p>	04-C 04-D 01(EXTRA CLASS)
15	SEC-C SEC-D	07.02.2022 To 14.02.2022	REVISION CLASSES	04-C 04-D 01(EXTRA CLASS)

N.B - C & D :: ELECTRICAL ENGG. & ELECT & TELECOMMUNICATION ENGG.

Ms.Bishmita Pradhan
PTGF in Comp.Appl.

Academic Coordinator

Principal