

Lesson plan of ENGINEERING CHEMISTRY Theory 2nd Sem Summer-2022

(From 14.03.2022 to 18.06.2022)

| SL. NO | SECTION | WEEK | THEORY CHAPTER/TOPIC | PERIOD (Total:60 periods) |
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| 1 | SEC-A SEC-B | 14.03.2022 To 17.03.2022 | <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 CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |
| 2 | SEC-A SEC-B | 21.03.2022 To 26.03.2022 | <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 CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |
| 3 | SEC-A SEC-B | 28.03.2022 To 02.04.2022 | <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 CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |
| 4 | SEC-A SEC-B | 04.04.2022 To 09.04.2022 | <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 CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |

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| 5 | SEC-A SEC-B | 11.04.2022 To 16.04.2022 | <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).</p> <p>DOUBT CLEARING CLASSES</p> | 03-A 02-B 01(EXTRA CLASS) |
| 6 | SEC-A SEC-B | 18.04.2022 To 23.04.2022 | <p>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>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)</p> <p>DOUBT CLEARING CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |
| 7 | SEC-A SEC-B | 25.04.2020 To 30.04.2020 | <p>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 CLASSES</p> | 04-A 04-B 01(EXTRA CLASS) |
| 8 | SEC-A SEC-B | 02.05.2022 To 07.05.2021 | <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> <p>DOUBT CLEARING CLASSES</p> | 03-A 03-B 01(EXTRA CLASS) |

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| 9 | SEC-A SEC-B | 09.05.2022 To 14.05.2022 | NOMENCLATURE OF ORGANIC COMPOUNDS | 04-A 04-B 01(EXTRA CLASS) |
| 10 | SEC-A SEC-B | 17.05.2022 To 21.05.2022 | D. INDUSTRIAL CHEMISTRY 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) , Advantages of Hot lime over cold lime process. Organic Ion exchange method (principle, process, and regeneration of exhausted resins) DOUBT CLEARING CLASSES | 03-A 03-B 01(EXTRA CLASS) |
| 11 | SEC-A SEC-B | 23.05.2022 To 28.05.2022 | 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. 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). DOUBT CLEARING CLASSES | 04-A 04-B 01(EXTRA CLASS) |
| 12 | SEC-A SEC-B | 31.05.2022 To 04.06.2022 | 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. DOUBT CLEARING CLASSES | 03-A 03-B 01(EXTRA CLASS) |
| 13 | SEC-A SEC-B | 06.06.2022 To 11.06.2022 | Definition of Elastomer (Rubber). Natural Rubber (it's draw backs). Vulcanisation of Rubber. Advantages ofVulcanised rubber over raw rubber. Chapter 14: Chemicals in Agriculture: Pesticides: Insecticides, herbicides, fungicides- Examples and uses. Bio Fertilizers: Definition, examples and uses. DOUBT CLEARING CLASSES | 04-A 04-B 01(EXTRA CLASS) |

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| 14 | SEC-A SEC-B | 13.06.2022 To 18.06.2022 | REVISION CLASSES | 04-A 04-B |
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N.B - A & B :: CIVIL ENGG. & MECHANICAL ENGG.

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