



LESSON PLAN

DEPARTMENT: MATHEMATICS AND SCIENCE

BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

ACADEMIC SESSION:-2023-24

SEMESTER: - 2nd SEM SUMMER-2023

SUBJECT: -ENGINEERING CHEMISTRY

SECTION- A(CIVIL)(Tb)

FACULTY NAME:SOUMYANJALI PATI

Discipline: CIVIL SEC-A	Semester: 2nd Semester	Name of the Teaching Faculty: SOUMYANJALI PATI
Subject: Engineering Chemistry	No. of Days/ per week class allotted (Tue,Wed,Thurs,Sat)	Semester From: - Date: _01 / 02 / 2024 to 14/ 05/2024 No of Weeks: - 16
Week	Class Dates	Theory Topics
1st	01.02.2024 03.02.2024	Chapter 1: Atomic structure : Introduction, Syllabus discussion and previous years related study discussion Fundamental particles (electron, proton & neutron Definition, mass and charge)
2nd	06.02.2024 07.02.2024 08.02.2024 10.02.2024	Rutherford's Atomic model (postulates and failure), Atomic mass and mass number, Definition, examples and properties of Isotopes, isobars and isotones. Bohr's Atomic model (Postulates only), Bohr-Bury scheme, Aufbau's principle, Hund's rule, Electronic configuration (up to atomic no 30) CLASS TEST

4 th	13.02.2024 15.02.2024 17.02.2024 20.02.2024 21.02.2024 22.02.2024	Chapter 2 : Chemical Bonding : Definition , types Electrovalent bond with examples (formation of NaCl, MgCl₂) Covalent bond with examples (formation of H₂,Cl₂, O₂, N₂, H₂O,CH₄, NH₃) Formation of covalent bond with examples. Coordinate bond with examples (formation of NH₄⁺, SO₂) CLASS TEST
5 th	24.02.2024 27.02.2024 28.02.2024 29.02.2024	Chapter 3 : Acid base theory : Concept of Arrhenius, Lowry Bronsted (Postulates and limitations only). 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. CLASS TEST
6 th	05.03.2024 06.03.2024 07.03.2024	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.
	09.03.2024	pH of solution (definition with simple numericals) Importance of pH in industry (sugar, textile, paper industries only)

7 th	12.03.2024 13.03.2024 14.03.2024 16.03.2024	CLASS TEST 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)
8 th	19.03.2024	CLASS TEST
	20.03.2024 21.03.2024 23.03.2024	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. CASSS TEST
9 th	27.03.2024 28.03.2024 30.03.2023	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),
10 th	02.04.2024	

	03.04.2024	v) Refining of the metal (Electro refining, & Distillation only)
	04.04.2024	Chapter 8 : Alloys: Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example. Composition and uses of Brass, Bronze, Alnico, Duralumin Chapter 9 : Hydrocarbons : Saturated and Unsaturated Hydrocarbons (Definition with example) Aliphatic and Aromatic Hydrocarbons (Huckle's rule only). Difference between Aliphatic and aromatic hydrocarbons IUPAC system of nomenclature of Alkane
	06.04.2024	
11 th	09.04.2024	IUPAC system of nomenclature of Alkane. IUPAC system of nomenclature of Alkene, Alkyne IUPAC system of nomenclature Alkene, Alkyne.

REFERENCE BOOK:

1. Eng. Chemistry by Y.R.Sharma and P.Mitra, Kalyani Publishers.
2. Textbook of intermediate Chemistry Part-1 and Part-2 by Nanda, Das, Sharma Kalyani Publishers.

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