

LESSON PLAN
Session: 2023 – 24 (Winter)
(Subject: Engineering Chemistry)

Semester: 1 st Sem (2023-24)		Name of the Teaching Faculty: Sushreeta Behera, Lect. in Chemistry
Class Allotted:60		Semester from date:16/08/2023 to date:11/12/2023 Branch-CSE & EEE
Class	Date	Theory Topics
1	17/08/23	Basic concepts of Chemistry:(elements, atom, molecule, radicals) Chemical formulae
2	21/08/23	Definitions of atomic weight, molecular weight, Equivalent weight (calculation of equivalent mass of metal and variable equivalent mass)
3	22/08/23	Determination of equivalent weight of Acid, Base and Salt.
4	24/08/23	Introduction of solution, Molarity and normality with Simple problems.
5	25/08/23	Relation between normality and molarity. Molality and simple problems
6	28/08/23	pH of solution (definition with simple numerical)
7	29/08/23	Numerical and importance of pH in industry (sugar, textile, paper industries)
8	31/08/23	Fundamental particles (electron, proton & neutron Definition, mass and charge) .Rutherford's Atomic model
9	1/09/23	Failures of Rutherford atomic Model. Atomic mass and mass number. Definition, examples and properties of Isotopes & Isobars
10	4/09/23	Definition, examples and properties of isotones. Bohr's Atomic model
11	5/09/23	Bohr-Bury scheme, Quantum numbers, n+l rule and Aufbau principle
12	7/09/23	Hund's rule, Electronic configuration of elements (upto atomic no 30) and ions. Exceptional configuration of cu and cr.
13	8/09/23	Definition, types of chemical bond. Electrovalent bond with examples (formation of NaCl, MgCl ₂)
14	11/09/23	Covalent Bond with examples (H ₂ , Cl ₂ , O ₂ , N ₂ , H ₂ O, CH ₄ NH ₃)
15	12/09/23	Coordinate bond with examples (formation of NH ₄ ⁺ , SO ₂)
16	14/09/23	Concepts of Arrhenius theory and its limitation
17	15/09/23	Bronsted-Lowry theory of acid and base
18	18/09/23	Limitations of Bronsted-Lowry theory and previous year question discussion
19	21/09/23	Lewis theory and its limitations.
20	22/09/23	Definition of Salt, Types of salts (Normal, acidic, basic, double, complex and mixed salts)
21	25/09/23	Definition and types (Strong & weak) of Electrolytes with example. Electrolysis (Principle & process)
22	26/09/23	Electrolysis of NaCl (fused and aqueous solution). Faraday's 1st of Electrolysis (Statement, mathematical expression and Simple numerical)
23	28/09/23	Faraday's 2nd law of Electrolysis (Statement, mathematical expression and Simple numerical). Industrial application of Electrolysis- Electroplating (Zinc plating)
24	03/10/23	Definition of Corrosion, Types of Corrosion- Atmospheric Corrosion, Waterline corrosion. Mechanism of rusting of Iron. Protection from Corrosion by (i) Alloying and (ii) Galvanization.
25	5/10/23	Definition of Mineral, ores, gangue with example. Distinction between Ores and Minerals. Ore Dressing & Gravity separation

26	6/10/23	Concentration (magnetic separation, Froth floatation & leaching)
27	9/10/23	Oxidation (Calcinations, Roasting) Reduction (Smelting, Definition & examples of flux, slag)
28	10/10/23	Refining of the metal (Electro refining, & Distillation only)
29	12/10/23	Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example. Composition and uses of Brass, Bronze, Alnico, Duralumin
30	13/10/23	Introduction ,Saturated and Unsaturated Hydrocarbons (Definition ,general formula with example)
31	16/10/23	Aliphatic and Aromatic Hydrocarbons (Huckle's rule). Difference between Aliphatic and aromatic hydrocarbons. IUPAC name(prefix,wordroot &suffix)
32	17/10/23	IUPAC system of nomenclature of Alkanes
33	19/10/23	IUPAC system of nomenclature of Alkenes ,Alkynes ,alkyl halide and alcohol
34	20/10/23	IUPAC name of Bond line notations and common name
35	30/10/23	Uses of some common aromatic compounds (Benzene, Toluene, BHC, Phenol, Naphthalene, Anthracene and Benzoic acid) in daily life
36	31/10/23	Previous year question discussion
37	2/11/23	Sources of water, Soft water, Hard water. Types of Hardness (temporary or carbonate and permanent or non-carbonate)
38	3/11/23	Removal of temporary hardness of water. Unit of hardness
39	6/11/23	Hot lime & cold lime—Principle, process & advantages, Advantages of Hot lime over cold lime process
40	7/11/23	Organic ion-exchange process-Principle, process and regeneration of Exhausted Resin.
41	9/11/23	Lubricants; Definition and Types(solid, Liquid and semisolid)and examples
42	10/11/23	Specific uses or lubricants (graphite, oils and Grease),Purpose of lubrication.
43	13/11/23	Fuel: Definition and classification of fuels. Calorific value of fuel, Choice Of good fuel.
44	14/11/23	Liquid: Diesel, Petrol, and Kerosene --- Composition and uses
45	16/11/23	Gaseous: Producer gas and Water gas-Composition and uses.
46	17/11/23	Elementary idea about LPG, CNG and coal gas (Composition and uses).
47	20/11/23	Definition of Monomer, Polymer, Homo-polymer, Co-polymer and Degree of polymerization
48	21/11/23	Difference between Thermosetting and Thermoplastic. Composition and uses of Polythene
49	23/11/23	Composition and uses of Poly-Vinyl Chloride and Bakelite.
50	24/11/23	Definition of Elastomer (Rubber). Natural Rubber (it's drawbacks).
51	28/11/23	Vulcanization of Rubber. Advantages of Vulcanized rubber over raw rubber.
52	30/11/23	Pesticides: Insecticides, herbicides, fungicides (Examples and uses). Bio Fertilizers: Definition, examples and uses
53	1/12/23	Revision of Atomic structure, Chemical Bonding & Theory of acid & base
54	2/12/23	Revision of Electrochemistry & Corrosion
55	4/12/23	Revision of Metallurgy & Alloy
56	5/12/23	Revision of Organic chemistry
57	7/12/23	Revision of water treatment and lubricant
58	8/12/23	Revision of Fuel & polymer
59	9/12/23	Previous year question discussion
60	11/12/23	Previous year question discussion

Signature of the faculty
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Signature of the H.O.D.
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