

LESSON PLAN FOR ENGINEERING CHEMISTRY (Th. 2b) (2021-22)

Discipline: Civil & Auto	Semester: 1ST	Name of the Teaching Faculty: SASHMITA NAYAK (Lect.)	
Subject: ENGG. CHEMISTRY	No. of days per week class allotted: 4	Semester From Date : 25/10/2021 to Date: 31/01/2022 No. of Weeks: 14	
Week	Class Day	Theory	Range
1st		A. PHYSICAL CHEMISTRY	25/10/2021 to 31/10/2021
		Chapter 1 : Atomic Structure	
	1st	Fundamental Particles (Electron, Proton, neutron),Defination,mass & Charge	
	2nd	Rutherford's atomic model (Postulates & Failure)	
	3rd	Atomic Mass & Mass number	
2nd	4th	Definition,examples & Properties of Isotopes,Isobars & Isotones	01/11/2021 to 07/11/2021
	1st	Bohr's Atomic model (Postulates)	
	2nd	Bohr-Bury scheme, Aufbau's principle	
	3rd	Hund's Rule,Electronic configuration (Upto atomic no. 30)	
		Chapter 2 :Chemical Bonding	
3rd	4th	Definition,types Electrovalent & Co-valent bond	08/11/2021 to 14/11/2021
	1st	Co-ordination bond with Example Formation of NaCl,MgCl ₂ ,H ₂ ,Cl ₂ ,O ₂ ,N ₂ ,H ₂ O,CH ₄ ,NH ₃ ,NH ₄ ⁺ ,SO ₂	
		Chapter 3 : Acid base Theory:-	
	2nd	Concept of Arrhenius, Lowery Bronsted Theory.Postulate & Limitation	
4th	3rd	Concept of Lewis Theory of acid & base with examples.postulates and limitations. Neutralization of acid & base.	15/11/2021 to 21/11/2021
	4th	Definition & types of salt with example.(Normal,acidic,basic,double,complex,mixed salt)	
		Chapter 4 : Solutions	
4th	1st	Definition of Atomic wt.,molecular wt.,Equivalent wt.	15/11/2021 to 21/11/2021
	2nd	Determination of equivalent weight of acid,base & salt.	
	3rd	modes of expression of the concentrations Molarity, Normality,& molality with problems	
	4th	PH of solution.(Defination with Numericals)	

5th	1st	Importance of PH in Industry(Sugar,Textile,Paper Industries)	22/11/2021 to 28/11/2021
		Chapter 5: Electrochemistry:-	
	2nd	Definition & types (strong and weak)of electrolytes with example.	
	3rd	Electrolysis (Principle & process) with example of Nacl (Fused & Aqueous solution)	
	4th	Faraday's 1st & 2nd law of electrolysis(statement, mathematical expression and simple numerical).Industrial application of electrolysis.Electroplating (Zn only)	
6th		Chapter 6 : Corrosion:-	29/11/2021 to 05/12/2021
	1st	Definition & types of corrosion.Atmospheric & water line corrosion.	
	2nd	Mechanism of rusting of Iron only.Protection from Corrosion by (i) Alloying,(ii) Galvanization	
		B. INORGANIC CHEMISTRY	
		Chapter 7 :Metallurgy:-	
	3rd	Definition of Mineral,Ore, Gaunge nwith example.Distinction between Ore & Mineral.	
	4th	General methods of extraction of metals.Ore dressing, concentration (Gravity Separation)	
7th	1st	Magnetic separation,Froth floatation & leaching.	06/12/2021 to 12/12/2021
	2nd	Oxidation (Calcination, Roasting),	
	3rd	Reduction(Smelting,Definition & examples of flux & slag)	
	4th	Refining of the metal(Electro refining & Distillation only)	
8th		Chapter 8: Alloys:-	13/12/2021 to 19/12/2021
	1st	Definition of alloy.Types of alloys (Ferro, Non ferro & Amalgam) with example.	
	2nd	Composition & uses of Brass,Bronze, Alnico, Duralumin	
		C. ORGANIC CHEMISTRY	
		Chapter 9 : Hydrocarbons:-	
	3rd	Saturated & UnsaturatedHydrocarbons (Definition with Examples)	
	4th	Aliphatic & aromatic Hydrocarbons (Huckle's Rule only)Difference between Aliphatic & aromatic hydrocarbons.	
9th	1st	IUPAC System of nomenclature of Alkane.Alkene	20/12/2021 to 26/12/2021
	2nd	Alkyne,Nomenclature of Alkyl halide	
	3rd	Nomenclature of Alcohol with bond line notation.	
	4th	Uses of Benzene, Toluene,BHC, Phenol	

10th	1st	Uses of Naphthalene, Anthracene, & Benzoic acid in daily life.	27/12/2021 to 02/01/2022
		D.INDUSTRIAL CHEMISTRY	
		Chapter 10:Water Treatment:-	
	2nd	Sources of water,Soft water & hard water,hardness, types of hardness (temporary or carbonate & permanent or non-carbonate)	
	3rd	Removal of hardness by lime soda method.	
	4th	Hot lime soda method. Principle,process & advantages	03/01/2022 to 09/01/2022
11th	1st	Cold lime soda method, Principle,process & advantages	
	2nd	Advantages of hot lime over cold lime process.	
	3rd	Organic Ion Exchange method (Principle,process & regeneration of exhausted resins)	
		Chapter 11 :Lubrication:-	
	4th	Definition & type of Lubricant.(solid,liquid and semisolid with examples)	10/01/2022 to 16/01/2022
12th	1st	Specific use of Lubricant.(Graphite,Oil,Grease), Purpose of Lubrication.	
		Chapter 12: Fuel:-	
	2nd	Definition & Classification of Fuel, defination of calorific value of fuel, Choice of a good fuel.	
	3rd	Liquid- Diesel,Petrol,& Kerosene- (Composition & Use)Gaseous- Producer & Water gas (Composition & Use)	
	4th	Elementary idea about LPG,CNG, Coal gas	17/01/2022 to 23/01/2022
13th		Chapter 13: Polymer:-	
	1st	Definition of monomer,polymer, Homo polymer, ,	
	2nd	Co-polymer & degree of Polymerization	
	3rd	Difference between thermosetting & thermoplastic.	
	4th	Composition & uses of Polythene,poly-vinyl chloride & Bakelite.	24/01/2022 to 30/01/2022
14th	1st	Definition of Elastomer,Natural rubber.It's drawbacks.Volcanised rubber over raw rubber.	
		Chapter 14 : Chemicals in Agriculture:-	
	2nd	Pesticides- Insecticides,herbicides,fungicides(Examples & uses)	
	3rd	,Biofertilizers : Definition, examples & uses.	
	4th	Doubt clear and Discuss probable questions.	31-01-22
15th	1st	Doubt clear and Discuss probable questions.	