

LESSON PLAN FOR ENGINEERING CHEMISTRY (Th. 2b)

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 : 09/11/2020	to Date: 31/01/2021
Week	Class Day	Theory	Range
1st		A. PHYSICAL CHEMISTRY	09/11/2020 TO 15/11/20
		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,Definition,examples & Properties of Isotopes,Isobars & Isotones	
4th	Bohr's Atomic model (Postulates),Bohr-Bury scheme, Aufbau's principle,Hund's Rule,Electronic configuration (Upto atomic no. 30)		
2nd		Chapter 2 :Chemical Bonding	16/11/20 TO 22/11/20
	1st	Definition,types Electrovalent & Co-valent bond with Example	
	2nd	Co-ordination bond with Example	
		Chapter 3 : Acid base Theory:-	
	3rd	Concept of Arrhenius, Lowery Bronsted Theory.Postulate & Limitation	
4th	Concept of Lewis Theory of acid & base with examples.postulates and limitations. Neutralization of acid & base.		
3rd	1st	Definition & types of salt with example.(Normal,acidic,basic,double,complex,mixed salt)	23/11/20 TO 29/11/20
		Chapter 4 : Solutions	
	2nd	Definition of Atomic wt.,molecular wt.,Equivalent wt.,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),Importance of PH in Industry(Sugar,Textile,Paper Industries)		
4th		Chapter 5: Electrochemistry:-	30/11/20 TO 06/12/20
	1st	Definition & types (strong and weak)of electrolytes with example.Electrolysis (Principle & process) with example of Nacl (Fused & Aqueous solution)	
	2nd	Faraday's 1st & 2nd law of electrolysis(statement, mathematical expression and simple numerical).Industrial application of electrolysis.Electroplating (Zn only)	
		Chapter 6 : Corrosion:-	
3rd	Definition & types of corrosion.Atmospheric & water line corrosion.		

	4th	Mechanism of rusting of Iron only. Protection from Corrosion by (i) Alloying, (ii) Galvanization	
5th		B. INORGANIC CHEMISTRY	
		Chapter 7 :Metallurgy:-	
	1st	Definition of Mineral, Ore, Gauge with example. Distinction between Ore & Mineral.	07/12/20 TO 13/12/20
	2nd	General methods of extraction of metals. Ore dressing, concentration (Gravity Separation), Magnetic separation	
	3rd	, Froth floatation & leaching., Oxidation (Calcination, Roasting)	
4th	Reduction (Smelting, Definition & examples of flux & slag), Refining of the metal (Electro refining & Distillation only)		
6th		Chapter 8: Alloys:-	14/12/20 TO 20/12/20
	1st	Definition of alloy. Types of alloys (Ferro, Non ferro & Amalgam) with example., Composition & uses of Brass, Bronze, Alnico, Duralumin	
		C. ORGANIC CHEMISTRY	
		Chapter 9 : Hydrocarbons:-	
	2nd	Saturated & Unsaturated Hydrocarbons (Definition with Examples), Aliphatic & aromatic Hydrocarbons (Huckle's Rule only) Difference between Aliphatic & aromatic hydrocarbons.	
	3rd	IUPAC System of nomenclature of Alkane., Alkene	
	4th	Alkyne, Nomenclature of Alkyl halide	
7th	1st	Nomenclature of Alcohol with bond line notation.	21/12/20 TO 27/12/20
	2nd	Uses of Benzene, Toluene, BHC, Phenol	
	3rd	Uses of Naphthalene, Anthracene, & Benzoic acid in daily life.	
		D. INDUSTRIAL CHEMISTRY	
		Chapter 10: Water Treatment:-	
	4th	Sources of water, Soft water & hard water, hardness, types of hardness (temporary or carbonate & permanent or non-carbonate)	
8th	1st	Removal of hardness by lime soda method., Cold lime soda method, Principle, process & advantages	28/12/2020 to 03/01/2021
	2nd	Hot lime soda method. Principle, process & advantages	
	3rd	Advantages of hot lime over cold lime process.	
	4th	Organic Ion Exchange method (Principle, process & regeneration of exhausted resins)	
9th		Chapter 11 :Lubrication:-	04/01/2021 TO 10/01/2021
	1st	Definition & type of Lubricant. (solid, liquid and semisolid with examples)	
	2nd	Specific use of Lubricant. (Graphite, Oil, Grease), Purpose of Lubrication.	
		Chapter 12: Fuel:-	
	3rd	Definition & Classification of Fuel, definition of calorific value of fuel, Choice of a good fuel.	
	4th	Liquid- Diesel, Petrol, & Kerosene- (Composition & Use)	

10th	1st	Gaseous- Producer & Water gas (Composition & Use)	11/01/2021 TO 17/01/2021
	2nd	Elementary idea about LPG,CNG, Coal gas	
		Chapter 13: Polymer:-	
	3rd	Definition of monomer,polymer, Homo polymer, Co-polymer & degree of Polymerization	
	4th	Difference between thermosetting & thermoplastic.	
11th	1st	Composition & uses of Polythene	18/01/2021 TO 24/01/2021
	2nd	poly-vinyl chloride & Bakelite.	
	3rd	Definition of Elastomer,Natural rubber.It's drawbacks.Volcanised rubber over raw rubber.	
		Chapter 14 : Chemicals in Agriculture:-	
	4th	Pesticides- Insecticides,herbicides,fungicides(Examples & uses)	
12th	1st	Biofertilizers : Definition, examples & uses.	25/01/2021 TO 31/01/2021
	2nd	Doubt clearing and question discussion	
	3rd	previous year question and probable question discussion	
	4th	previous year question and probable question discussion	