

Lesson Plan

Name of the Institute:		C. V. Raman Polytechnic
Department:		Basic Science
Semester/Division/Branch:		1 st sem/All Branches
Subject Name with code:		Engineering Chemistry (Th-2b)
Total No. of Class (Required):		60
Faculty Name:		Dr Jayashree Samantray
Class No.	Brief description of the Topic/Chapter to be taught	Remarks
1	Chapter 1: Atomic structure : Fundamental particles	
2	Rutherford's Atomic model	
3	Atomic mass and mass number	
4	Bohr's Atomic model	
5	Bohr-Bury scheme, Aufbau's principle, Hund's rule	
6	Electronic configuration (up to atomic no 30)	
7	Chemical Bonding : Definition , types	
8	Electrovalent bond with examples	
9	Covalent bond with examples	
10	Coordinate bond with examples	
11	Acid base theory : Concept of Arrhenius theory for acid and base with examples	
12	Lowry Bronsted theory for acid and base with examples	
13	Lewis theory for acid and base with examples	
14	Definition of Salt, Types of salts	
15	Solutions : Definitions of atomic weight, molecular weight, Equivalent weight	
16	Determination of equivalent weight of Acid, Base and Salt.	
17	Modes of expression of the concentrations (Molarity , Normality & Molality)	
18	pH of solution & Importance of pH in industry	
19	Electrochemistry : Definition and types	
20	Faraday's 1st and 2 nd law of Electrolysis	
21	Corrosion: Definition of Corrosion, Types of Corrosion	

22	Mechanism of rusting of Iron only. Protection from Corrosion	
23	Metallurgy: Definition of Mineral, ores	
24	Distinction between Ores And Minerals	
25	General methods of extraction of metals	
26	Concentration (Gravity separation, magnetic separation, Froth floatation & leaching)	
27	Oxidation (Calcinations, Roasting)	
28	Reduction (Smelting, Definition & examples of flux, slag)	
29	Refining of the metal (Electro refining, & Distillation only)	
30	Alloys: Definition of alloy. Types of alloys	
31	Hydrocarbons : Saturated and Unsaturated Hydrocarbons	
32	Aliphatic and Aromatic Hydrocarbons	
33	IUPAC system of nomenclature of Alkane, Alkene, Alkyne	
34	IUPAC system of nomenclature of alkyl halide and alcohol	
35	Bond line notation	
36	Uses of some common aromatic compounds (Benzene, Toluene, BHC)	
37	Uses of some common aromatic compounds (B Phenol, Naphthalene, Anthracene and Benzoic acid)	
38	Doubt Clearing Class	
39	Doubt Clearing Class	
40	Doubt Clearing Class	
41	Water Treatment : Sources of water	
42	Soft water, Hard water, hardness, types of Hardness (temporary or carbonate and permanent or non-carbonate)	
43	Removal of hardness by lime soda method (hot lime & cold lime— Principle, process & advantages)	
44	Advantages of Hot lime over cold lime process	
45	Organic Ion exchange method (principle, process, and regeneration of exhausted resins)	
46	Lubricants: Definition of lubricant	
47	Types and specific uses of lubricants	
48	Purpose of lubrication	
49	Fuel: Definition and classification of fuel	
50	Liquid: Diesel, Petrol, and Kerosene --- Composition and uses	
51	Gaseous: Producer gas and Water gas	

52	Elementary idea about LPG, CNG and coal gas (Composition and uses only)	
53	Polymer: Definition of Monomer, Polymer, Homo-polymer, Co-polymer and Degree of polymerization	
54	Difference between Thermosetting and Thermoplastic, Composition and uses of Polythene, & Poly-Vinyl Chloride and Bakelite.	
55	Definition of Elastomer (Rubber). Natural Rubber (its drawbacks).	
56	Vulcanisation of Rubber. Advantages of Vulcanised rubber over raw rubber.	
57	Revision	
58	Revision	
59	Doubt Clearing Class	
60	Doubt Clearing Class	



Signature of the Faculty



Signature of the H.O.D