

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
Name of the Faculty:	Academic Year: 2019-20
Course No.: TH.2B	Course Name: Eng. Chemistry
Programme: Diploma	Branch: Math and Science
Year/Sem: III / V	Section:

Sl. No.	Period	Time (min)	Unit	Topic to be Covered	Teaching Method
1.	1.	55	1	Fundamental particles (electron, proton & neutron Definition, mass and charge). Rutherford's Atomic model (postulates and failure)	Blackboard and Chalk
2.	2.	55	1	Atomic mass and mass number, Definition, examples and properties of Isotopes, isobars and isotones	Blackboard and Chalk
3.	3.	55	1	Bohr's Atomic model (Postulates only), Bohr-Bury scheme	Blackboard and Chalk
4.	4.	55	1	Aufbau's principle, Hund's rule, Electronic configuration (up to atomic no 30).	Blackboard and Chalk
5.	5.	55	1	Question and discussion	Blackboard and Chalk
6.	6.	55	2	Introduction on chemical bonding ,types of chemical bond (electrovalent bond, covalent bond , coordinate bond)	Blackboard and Chalk
7.	7.	55	2	Definition of electrovalent bond, covalent bond , coordinate bond with suitable example such as NaCl, MgCl ₂ , H ₂ , Cl ₂ , O ₂ , N ₂ , H ₂ O, CH ₄ , NH ₃ , NH ₄ ⁺ , SO ₂	Blackboard and Chalk
8.	8.	55	3	Introduction on Acid base theory	Blackboard and Chalk
9.	9.	55	3	Concept of Arrhenius, Lowry Bronsted and Lewis theory for acid and base with examples (Postulates and limitations only)	Blackboard and Chalk
10	10.	55	3	Acid base theory	Smart class
11	11.	55	3	Definition of Salt, Types of salts (Normal, acidic, basic, double, complex and mixed salts, definitions with 2 examples from each).	Blackboard and Chalk
12	12.	55	4	Definitions of atomic weight, molecular weight, Equivalent weight	Blackboard and Chalk
13	13.	55	4	Determination of equivalent weight of Acid, Base and Salt	Blackboard and Chalk
14	14.	55	4	Modes of expression of the concentrations (Molarity , Normality & Molality) with Simple Problems.	Blackboard and Chalk
15	15.	55	4	pH of solution (definition with simple numericals)	Blackboard and Chalk
16	16.	55	4	Importance of pH in industry (sugar, textile, paper industries only)	Blackboard and Chalk
17	17.	55	5	Definition and types (Strong & weak) of Electrolytes with example. Electrolysis (Principle & process) with example of NaCl (fused and aqueous solution).	Blackboard and Chalk
18	18.	55	5	Faraday's 1st and 2nd law of Electrolysis (Statement, mathematical expression and Simple numerical)	Blackboard and Chalk

19	19.	55	5	Industrial application of Electrolysis- Electroplating (Zinc only).	Blackboard and smartclass
20	20.	55	6	Definition of Corrosion, Types of Corrosion Atmospheric Corrosion, Waterline corrosion	Blackboard and Chalk
21	21.	55	6	Mechanism of rusting of Iron only. Protection from Corrosion by (i) Alloying and (ii) Galvanization.	Blackboard and Chalk
22	22.	55	7	Definition of Mineral, ores , gangue with example. Distinction between Ores And Minerals. General methods of extraction of metals,	Blackboard and Chalk
23	23.	55	7	i) Ore Dressing ii) Concentration (Gravity separation, magnetic separation, Froth floatation & leaching)	Blackboard and Chalk
24	24.	55	7	iii) Oxidation (Calcinations, Roasting) iv) Reduction (Smelting, Definition & examples of flux, slag)	Blackboard and Chalk
25	25.	55	7	v) Refining of the metal (Electro refining, & Distillation only)	Blackboard and Chalk
26	26.	55	8	Definition of alloy. Types of alloys (Ferro, Non Ferro & Amalgam) with example. Composition and uses of Brass, Bronze, Alnico, Duralumin	Blackboard and Chalk
27	27.	55	9	Saturated and Unsaturated Hydrocarbons (Definition with example)	Blackboard and Chalk
28	28.	55	9	Aliphatic and Aromatic Hydrocarbons (Huckle's rule only)	Blackboard and Chalk
29	29.	55	9	Difference between Aliphatic and aromatic hydrocarbons	Blackboard and Chalk
30	30.	55	9	IUPAC system of nomenclature of Alkane, Alkene	Blackboard and Chalk
31	31.	55	9	Alkyne, alkyl halide and alcohol (up to 6 carbons) with bond line notation.	Blackboard and Chalk
32	32.	55	9	Problem practice	Blackboard and Chalk
33	33.	55	9	Uses of some common aromatic compounds (Benzene, Toluene, BHC, Phenol, Naphthalene, Anthracene and Benzoic acid) in daily life.	Blackboard and Chalk
34	34.	55	10	Sources of water, Soft water, Hard water, hardness, types of Hardness (temporary or carbonate and permanent or non-carbonate)	Blackboard and Chalk
35	35.	55	10	Removal of hardness by lime soda method (hot lime & cold lime—Principle, process & advantages), Advantages of Hot lime over cold lime process.	Blackboard and Chalk
36	36.	55	10	Organic Ion exchange method (principle, process, and regeneration of exhausted resins)	Blackboard and Chalk
37	37.	55	11	Definition of lubricant, Types (solid, liquid and semisolid with examples only	Blackboard and Chalk
38	38.	55	11	specific uses of lubricants (Graphite, Oils, Grease), Purpose of lubrication	Blackboard and Chalk
39	39.	55	12	Definition and classification of fuel, Definition of calorific value of fuel, Choice of good fuel.	Blackboard and Chalk
40	40.	55	12	Liquid: Diesel, Petrol, and Kerosene --- Composition	Blackboard

				and uses.	and Chalk
41	41.	55	12	Gaseous: Producer gas and Water gas (Composition and uses). Elementary idea about LPG, CNG and coal gas (Composition and uses only).	Blackboard and Chalk
42	42.	55	13	Definition of Monomer, Polymer, Homo-polymer, Co-polymer and Degree of polymerization.	Blackboard and Chalk
43	43.	55	13	Difference between Thermosetting and Thermoplastic	Blackboard and Chalk
44	44.	55	13	Composition and uses of Polythene, & Poly-Vinyl Chloride and Bakelite.	Blackboard and Chalk
45	45.	55	13	Definition of Elastomer (Rubber). Natural Rubber (it's draw backs). Vulcanisation of Rubber. Advantages of Vulcanised rubber over raw rubber	Blackboard and Chalk
46	46.	55	13	Pesticides: Insecticides, herbicides, fungicides- Examples and uses.	Blackboard and Chalk
47	47.	55	13	Bio Fertilizers: Definition, examples and uses	Blackboard and Chalk
48	48.	55		Revision	
49	49.	55		Doubt clear class	
50	50.	55		Revision	
51	51.	55		Doubt clear class	
52	52.	55		Revision	
53	53.	55		Doubt clear class	
54	54.	55		Previous year question solve	
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56	56.	55		Revision	
57	57.	55		Doubt clear class	
58	58.	55		Revision	
59	59.	55		Previous year question solve	
60	60.	55		Previous year question solve	