

LESSON PLAN

DISCIPLINE: MATH AND SCIENCE	SEMESTER: SECOND	NAME OF THE TEACHING FACULTY: Mr S Maharana, Guest Lecturer in Chemistry, Govt. Polytechnic, Koraput
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SUBJECT: ENGG. CHEMISTRY	NO. OF. DAYS PER WEEK CLASS ALLOTTED			From – 25/10/2021 to 14/02/2022
1st	WEEK	CLASS DAY	THEORY	PRACTICAL
		1 ST	-Introduction, Matter and its states.	Introduction to chemistry lab, about safety measures, about maintenance of practical records.
		2 ND	-Atomic structure: fundamental particles (electron, proton and neutron), their properties.	Introduction to the students about use of different lab equipments and how to handle them safely.
		3 RD	-Atomic number and mass no. - Rutherford's atomic model and its drawback.	-----
	4 TH	- Drawback of Rutherford's atomic model. - Bohr's Atomic model	-----	

2 nd	1 ST	<ul style="list-style-type: none"> - Drawbacks of Bohr's atomic model. - Bohr-Bury scheme - Quantum Number, types 	Exp. 1, preparation and study of properties of CO ₂ gas, explanation of theory with equations.
	2 ND	<ul style="list-style-type: none"> -Detail of quantum number. -Aufbau's principle, Hund's rule, Electronic configuration 	Checking of rough practical record and demonstration of the experiment.
	3 RD	<ul style="list-style-type: none"> -Doubt clearing class of Atomic structure. -Question practice. 	-----
	4 TH	-Introduction to Chemical bonding(definition, cause and types	-----
3 rd	1 ST	-)Ionic Bonding and Covalent bonding(Definition and formation of compounds with examples)	Expt. Conducted by the students.
	2 ND	<ul style="list-style-type: none"> -Coordinate bonding(Definition and formation of compounds with examples) - discussion and Doubt clearing of Chemical bonding 	Correction of practical records, discussion of viva questions of the expt.
	3 RD	<ul style="list-style-type: none"> -Basics of acid and bases. -Arrhenius concept of acid and 	-----

		base.	
	4 TH	-Draw backs of Arrhenius theory and Bronsted-Lowry theory with examples.	-----
4 th	1 ST	-Conjugate Acid-Base pair with examples. -Drawbacks of Bronsted-Lowry Theory	Exp. 2. Preparation and study of properties of ammonia gas. Explanation Of Theory With Equations.
	2 ND	-Lewis Theory of acid and base with examples.	Checking of rough practical record and demonstration of the experiment.
	3 RD	-Neutralization Reaction with examples. -Doubt clearing of acid base concept	-----
	4 TH	-Definition of salt and types of salt.	-----
5 th	1 ST	- Definitions of atomic weight, molecular weight, -Equivalent weight. Determination of equivalent weight of Acid, Base and Salt.	Expt. Conducted by the Students.
	2 ND	-Molarity , Normality -Related Numericals	Checking of practical records and discussion of viva questions of expt. 2.
	3 RD	-Molality and related numericals.	-----
	4 TH	-pH of solution and numericals	-----
	1 ST	-Importance of pH in industry.	Exp. 3. Crystallization of CuSO ₄ . Explanation Of Theory With

6 th		Equations.
2 ND	- Doubt clearing. -Electrochemistry: Definition and types (Strong & weak) of Electrolytes with example.	Checking of rough practical record and demonstration of the experiment.
3 RD	- Process of Electrolysis, its Mechanism with different example.	-----
4 TH	- Faraday's 1st and 2nd law of Electrolysis.	-----
1 ST	-Numericals, application of Electrolysis-Electroplating.	Expt. Conducted by the Students.
2 ND	-Corrosion and its types. - Definition of Corrosion, Types of Corrosion - Atmospheric Corrosion, Waterline corrosion.	Checking of practical records and discussion of viva questions of expt. 3.
3 RD	- Mechanism of rusting Iron only. - Protection from Corrosion by Alloying and Galvanization	-----
4 TH	--Basics of Organic chemistry -Types of organic compound on the basis carbon skeleton.	-----
1 ST	-Hydrocarbons:	Exp. 4. Acid Base Titration. Explanation Of Theory With


7th


8 th		<ul style="list-style-type: none"> definitions, general formula, examples. Rules for IUPAC system of nomenclature. 	Equations.
	2 ND	-Some more Rules for IUPAC system of nomenclature.	Checking of rough practical record and demonstration of the experiment.
	3 RD	Huckles rule, Aromatic compounds. -Practice of IUPAC nomenclature	-----
	4 TH	-Doubt clearing of organic chemistry. -revision	-----
9 th	1 ST	-Definition of Mineral, ores, gangue with example. -introduction to the extraction of minerals	Expt. Conducted by the Students Acidimetry.
	2 ND	-Ore Dressing -Gravity separation, magnetic separation,	Expt. Conducted by the Students Alkalimetry.
	3 RD	-Froth floatation & leaching -Calcinations,.	-----
	4 TH	-Roasting. -Smelting & examples of flux, slag	-----
	1 ST	-Electro refining, & Distillation	Checking of practical records and discussion of viva questions of expt. 4.

10 th	2 ND	-Definition of alloy. Types of alloys with example.	Exp. 5. Test of acid radicals. Discussion regarding Basic ideas of acid and basic radicals, aim and basic steps of the test.
	3 RD	-amalgam -Composition and uses of Brass, Bronze, Alnico, Duralumin -Revision of Inorganic Chemistry.	
	4 TH	- Water Treatment : Sources of water, Soft water, Hard water, hardness, types of Hardness.	
	1 ST	-Removal of hardness by lime soda method - Advantages of Hot lime over cold lime process.	
11 th	2 ND	-Organic Ion exchange method	Expt. Conducted by the Students.
	3 RD	-Question discussion and Revision.	
	4 TH	- Definition of Lubricant, Types. -Uses of Graphite, Oils, Grease.	
	1 ST	- Purpose of Lubrication, Revision.	
12 th	2 ND	- Definition and classification of fuel	Checking of practical records and discussion of viva questions of expt. 5.
		-Definition of calorific value of fuel	
		- Choice of good fuel.	
	3 RD	- Composition and uses of	-----

		diesel, petrol, kerosene. Producer gas and Water gas	
	4 TH	- composition & uses of LPG, CNG and coal gas. - revision of chapter fuel.	-----
	1 ST	-Basic ideas about polymer -Definition of Monomer, Polymer, Homo-polymer, Co-polymer with example.	Exp. 6. Test of basic radicals (known).
	2 ND	-Degree of polymerization -Difference between Thermosetting and Thermoplastic, -Composition and uses of Polythene, -Poly-Vinyl Chloride and Bakelite.	Checking of rough practical record and demonstration of the experiment.
	3 RD	-Natural Rubber -Definition of Elastomer	-----
	4 TH	-Natural Rubber -Definition of Elastomer	-----
	1 ST	Vulcanisation of Rubber. -Advantages of Vulcanised rubber over raw rubber.	Expt. Conducted by the Students.
	2 ND	-Question discussion and Revision of polymer	Test of unknown acid and basic radicals.
	3 RD	-introduction regarding modern	-----
13th			
14th			

15th	4 TH	agriculture. -Chemicals in Agriculture: -Pesticides: Insecticides, herbicides, fungicides with Examples and uses	-----
	1 ST	-Bio Fertilizers: Definition, examples and uses. - Question discussion and Revision of polymer	Test of unknown salt.
	2 ND	-Doubt clearing and Question discussion	Checking of practical records and viva voice.
	3 RD	-Previous year Questions and probable questions Discussion.	-----
	4 TH	-Previous year Questions and probable questions Discussion.	-----


 25.10.21
 (P.T.G.F. CHEMISTRY)


 25/10/21
 (HOD Maths & Sc)