

LESSON PLAN

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| DISCIPLINE: MATH AND SCIENCE | SEMESTER: SECOND | NAME OF THE TEACHING FACULTY: Mr. Sridhara Moharana, PTGF in Chemistry, Govt. Polytechnic, Koraput |
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| SUBJECT: ENGG. CHEMISTRY | NO. OF. DAYS PER WEEK CLASS ALLOTTED | From – 16/08/2023 To 11/12/2023 | |
| WEEK | CLASS DAY | THEORY | PRACTICAL |
| 1st | 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 | ----- |

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| 2 nd | 1 ST | - 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 | -Detail of quantum number. -Aufbau's principle, Hund's rule, Electronic configuration | Checking of rough practical record and demonstration of the experiment. |
| | 3 RD | -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 | -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 | -Basics of acid and bases. -Arrhenius concept of acid and | ----- |

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| | | 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. Crystalization of CuSO ₄ . Explanation Of Theory With |

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| 6 th | | - Doubt clearing. | Equations. |
| | 2 ND | -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. | ----- |
| 7 th | 1 ST | -Numericals, -Industrial 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 |

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| 8 th | | 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. |

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| 10 th | 2 ND | -Definition of alloy. Types of alloys with example. -amalgam | Exp. 5. Test of acid radicals. Discussion regarding Basic ideas of acid and basic radicals, aim and basic steps of the test. |
| | 3 RD | -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. | ----- |
| 11 th | 1 ST | -Removal of hardness by lime soda method - Advantages of Hot lime over cold lime process. | Checking of rough practical record and demonstration of the experiment. |
| | 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. | ----- |
| 12 th | 1 ST | - Purpose of lubrication, Revision. | Checking of practical records and discussion of viva questions of expt. 5. |
| | 2 ND | - Definition and classification of fuel -Definition of calorific value of fuel - Choice of good fuel. | |
| | 3 RD | - Composition and uses of | ----- |

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| | | diesel, petrol, kerosene. Producer gas and Water gas | |
| | 4 TH | - composition & uses of LPG, CNG and coal gas. - revision of chapter fuel. | ----- |
| 13 th | 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, | Checking of rough practical record and demonstratation of the experiment. |
| | 3 RD | -Poly-Vinyl Chloride and Bakelite. - | ----- |
| | 4 TH | -Natural Rubber - Definition of Elastomer | ----- |
| 14 th | 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 | ----- |

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| | | agriculture. -Chemicals in Agriculture: | |
| | 4 TH | -Pesticides: Insecticides, herbicides, fungicides with Examples and uses | ----- |
| 15 th | 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. | ----- |

Sridhara Maharana.

16/8/23
(HOD Math, E)