SECONDARY SCHOOL

**SUBJECT LOG-BOOK**

CHEMISTRY

FORM IV

2024

**FORM FOUR**

**SUBJECT TEACHER:**

| TOPIC | SUB - TOPIC | DATE | | CONCEPT COVERED | SUBJECT TEACHER REMARK’S AND SIGNATURE | HEAD OF DEPARTMENT REMARK’S AND SIGNATURE | HEAD OF SCHOOL REMARK’S AND SIGNATURE |
| --- | --- | --- | --- | --- | --- | --- | --- |
| FROM | TO |
| 1. Non Metals And their Compounds. | 1.1 General Chemical properties of Non-metals. |  |  | (i)Explain the oxidizing properties of non-metals.  (ii)Describe the displacement reactions of non-metals in a compound. |  |  |  |
| * 1. Chlorine |  |  | (i) Explain the preparation of Chlorine.  (ii)Describe the chemical properties of Chlorine.  (iii)Explain the uses of Chlorine. |  |  |  |
| 1.3 Hydrogen Chloride |  |  | (i)Prepare a dry sample of Hydrogen chloride gas.  (ii)Explain the properties of Hydrogen chloride gas. (iii)Explain the uses of Hydrogen chloride. |  |  |  |
| * 1. Sulphur |  |  | (i)Describe the extraction of Sulphur from natural deposits.  (ii)Explain the properties of Sulphur.  (iii)Explain the uses of Sulphur. |  |  |  |
| * 1. Sulphur dioxide |  |  | (i)Describe the properties of Sulphur dioxide.  (ii)Explain the uses and hazards of Sulphur dioxide. |  |  |  |
|  | * 1. Sulphuric Acid |  |  | (i)Describe the manufacture of Sulphuric acid by Contact process.  (ii)Explain the properties of Sulphuric acid.  (iii)Explain the uses of Sulphuric acid. |  |  |  |
| * 1. Nitrogen |  |  | (i)Prepare a sample of Nitrogen in the laboratory.  (ii)Explain the uses of Nitrogen. |  |  |  |
| * 1. Ammonia |  |  | (i)Prepare a dry sample of Ammonia gas in the laboratory.  (ii)Describe the properties of Ammonia.  (iii)Explain the uses of Ammonia. |  |  |  |
| * 1. Carbon |  |  | (i)Name the forms in which Carbon exists.  (ii)Describe allotropic forms of Carbon.  (iii)Explain the uses of the allotropes of Carbon. |  |  |  |
| * 1. Carbon Dioxide |  |  | (i)Prepare a dry sample of Carbon dioxide gas in the laboratory.  (ii)Analyze the properties of Carbon dioxide.  (iii)Explain the uses of Carbon dioxide. |  |  |  |
| 2. Organic Chemistry | 2.1 Introduction to Organic Chemistry |  |  | (i)Distinguish organic from inorganic chemistry.  (ii)Explain the importance of organic chemistry in life.  (iii)Explain the origin of organic compounds.  (iv)Describe the fractional distillation of crude oil. |  |  |  |
| 2.2 Hydrocarbons |  |  | (i)Classify the three families of hydrocarbons.  (ii)Write the homologous series of the three families of hydrocarbons.  (iii)Explain the concept of Isomerism.  (iv)Write structural formulae of all isomers of hydrocarbons up to five carbon atoms.  (v)Name the isomers of hydrocarbons up to five carbon atoms.  (vi)Apply a general formula to identify the families of hydrocarbons. |  |  |  |
| 2.3 Properties of Hydrocarbons |  |  | (i)Explain the physical properties of lower hydrocarbons; alkanes, alkenes and alkynes.  (ii)Explain the concept of saturated and unsaturated hydrocarbons.  (iii)Compare the chemical properties of alkanes, alkenes and alkynes. |  |  |  |
|  | * 1. Alcohols |  |  | (i)Prepare ethanol in the laboratory.  (ii)Write the homology of Alcohols up to five carbon atoms.  (iii)Write structure of all isomers of saturated Alcohols up to five carbon atoms.  (iv)Name all isomers of Alcohols up to five carbon atoms.  (v)Describe the properties of Alcohol.  (vi)Explain the uses of Alcohols.  (vii) Explain the harmful effects of Alcohols. |  |  |  |
| * 1. Carboxylic Acids. |  |  | (i)Identify natural sources of Organic acids.  (ii)Explain the oxidation of ethanol to ethanoic acid.  (iii)Write the structures of the homologues of Carboxylic acids up to five carbon atoms.  (iv)Name the isomers of carboxylic acids up to five carbon atoms. (v)Explain the properties of carboxylic acids.  (vi)Prepare soap from animal fats or vegetable oil. |  |  |  |
| 3. Soil Chemistry | * 1. Soil Formation |  |  | (i)Describe soil formation.  (ii)Describe the factors influencing soil formation. |  |  |  |
|  | * 1. Soil Reaction |  |  | (i)Explain the concept of soil reaction.  (iii)Measure the pH of a given soil sample.  (iv)Manage the soil pH by using different liming materials. |  |  |  |
| 3.3 Plant nutrients in the Soil. |  |  | (i)Categorize the essential plant nutrients.  (ii)Explain the functions of each of the primary macronutrients in plant growth.  (iii)Prepare plant nutrient cultures in the laboratory.  (iv)Manage the loss of plant nutrients from the soil. |  |  |  |
| 3.4 Manures and Fertilizers |  |  | (i)Prepare heap and pit compost manure.  (ii)Explain the advantages and disadvantages of natural manures.  (iii) Mention types of synthetic fertilizers used in Tanzania.  (iv)Explain the concept of fertilizer grades and analysis.  (v)Identify methods of fertilizer application.  (vi)Explain the advantages and disadvantages of artificial fertilizers as compared to natural manures. |  |  |  |
|  | 3.5 Soil Fertility and Productivity |  |  | (i)Explain the concept of soil fertility and soil productivity.  (ii)Differentiate soil fertility form soil productivity.  (iii)Explain the factors which determine fertility and productivity of the soil.  (iv)Explain the causes of loss in soil fertility. |  |  |  |
| 4. Pollution | 4.1 Concept of Pollution |  |  | -Explain the concept of pollution. |  |  |  |
| 4.2 Terrestrial Pollution |  |  | (i)Explain the concept of terrestrial pollution.  (ii)Identify human activities which cause terrestrial pollution.  (iii)Identify hazards caused by terrestrial pollution.  (iv) Suggest different methods of preventing terrestrial pollution. |  |  |  |
| 4.3 Aquatic Pollution |  |  | (i)Explain the concept of Aquatic pollution.  (ii)Identify human activities which cause water pollution.  (iii)Identify the hazards which are caused by water pollution.  (iv)Suggest ways of preventing water pollution. |  |  |  |
|  | * 1. Aerial Pollution |  |  | (i) Explain the concept of aerial pollution.  (ii)Identify human activities which cause aerial pollution.  (iii)Identify hazards caused by aerial pollution.  (iv)Suggest different methods of preventing air pollution.  (v)Identify safety measures to protect industrial workers from gaseous pollution. |  |  |  |
| 4.5 Environmental Conservation |  |  | (i)Explain the meaning of environmental conservation.  (ii)Demonstrate right attitudes, values and behaviors towards environmental conservation. |  |  |  |
| * 1. Global Warming |  |  | (i)Explain the global warming in terms of ‘green house’ effect.  (ii)Describe how the major “greenhouse” gases are produced.  (iii)Describe climatic conditions caused by global warming.  (iv)Suggest ways of preventing global warming. |  |  |  |
| * 1. Ozone Layer Destruction |  |  | (i)Explain the meaning of ozone layer and its importance of to life on earth.  (ii)Identify chemical substances which destroy the ozone layer.  (iii)Suggest methods of protecting the ozone layer. |  |  |  |
| 5. Qualitative Analysis | 5.1 The concept of Qualitative Analysis. |  |  | (i)Explain the meaning of qualitative analysis.  (ii)State the importance of qualitative analysis in real life. |  |  |  |
| * 1. Qualitative Analysis Procedures |  |  | (i)Use special apparatus for qualitative analysis.  (ii)Carry out preliminary test on an unknown sample. (iii)Prepare stock solutions from soluble and insoluble salts.  (iv)Precipitate insoluble salts from their solutions.  (v)Confirm cations and anions identified from the salt solutions. |  |  |  |

**Checked by ………………………………………………………………………………………… .Signature: ……………………………. .Date…………………….**