**THE PRESIDENT’S OFFICE-**

**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

**SCHEME OF WORK**

**SCHOOL’S NAME: SECONDARY SCHOOL**

**TEACHER'S NAME:**

**SUBJECT: CHEMISTRY**

**CLASS: FORM FOUR**

**TERM: 1st& 2nd TERM**

**YEAR: 2025**

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| **MAIN COMPETENCE** | **SPECIFIC COMPETENCE** | **TEACHING ACTIVITIES** | **MONTH** | **WEEK** | **PERIODS** | **REFERENCE** | **TEACHING/LEARNING TOOLS** | **ASSESSMENT TOOLS** | **REMARKS** |
| **NON METALS AND THEIR COMPOUNDS** | 1.1 General chemical properties of non metals | To prepare students to discuss the oxidizing properties of non metals as good electron acceptors | **JANUARY** | 3RD | 04 | Tanzania Institute of Education (2022), Chemistry for Secondary Schools, Book four, TIE, DSM. | Chart of oxidation reactions of non metal | Homework |  |
| To demonstrate the displacement of non – metal by another non metal from a compound | Cl2KI | Quiz  |  |
| 1.2 Chlorine | To lead students to discuss and make observations on the chemical properties of chlorine Demonstrate the oxidizing properties of chlorine |  |  | SO2, H2S FeCl2, Dyes, Cl, coloured flowers | Assignment  |  |
| To prepare students to discuss uses of chlorine | Chart of uses of Cl2 | Quick test |  |
| 1.3 Hydrogen Chloride | Prepare students prepare Hcl gas in the Laboratory using conc. H2SO4 and NaCl. | 4TH | 12 | NaCl, NH4ClConc. H2SO4,HCl | Exercise  |  |
| Lead a discussion on the uses of HCl gas. | Chart of the uses of HCl gas | Exercise |  |
| 1.4 Sulphur | To prepare students to discuss the extraction of sulphur by the Frisch process  | **FEBRUARY****A****P****R****I****L** | 1ST | Diagram of the industrial extraction of Sulphur | Quiz  |  |
| Lead a discussion on the properties and uses of sulphur | 2ND | S, Cu, Fe, Conc H2SO4, K2Cr2O7 | Oral questionsHomework Assignment  |  |
| 1.5 Sulphur dioxide | To prepare students to discuss the uses properties and hazards of sulphur dioxide | 3RD | 08 | SO2, NaOH, KMnO4, FeCl2, HNO3 H2S, Mg, PbO | Quick test  |  |
| 1.6 Sulphuric acid | To prepare students to discuss the contact process for the manufacture of H2SO4 | 4TH | Chart of industrial manufacture of H2SO4 | Oral questions |  |
| To prepare students to discuss the properties and uses of H2SO4 | Mg, MgO, NaOH, conc H2SO4, C, CuSO4, products | Homework  |  |
| 1.7 Nitrogen | Prepare students to prepare a sample of nitrogen gas in the laboratory and discuss its uses |  **MARCH****APRIL**  | 1ST 2ND | 08 | Gas jar, Cu, conc. KOH, heat, flosses | Assignment  |  |
| 1.8 Ammonia | To demonstrate the preparation of dry sample of NH3 in the laboratory | 3RD | 04 | Ca(OH)2, NH4Cl, CaO, litmus, conc. HCl | quiz |  |
| To prepare students to discuss the uses and properties of NH3 gas  | HCl, CaO, O2, NH3, H2O, and Litmus | Oral questions |  |
| 1.9 Carbon | To lead students on the discussion on the forms in which carbon exists and allotropic forms of carbon | 1ST 2ND | 08 | Egg shells CO32-, coal, graphite and Diamond | Homework  |  |
| 1.10 Carbon dioxide | To prepare students to prepare a dry CO2 gas in the laboratory | CaCO3, HCl, Apparatus | Assignment  |  |
| To lead students to observe and analyze the properties and uses of CO2 | CO2, Ca(OH)2, Ba (OH)2 CaCO3, Mg, H2O | Test  |  |
| **MID-TERM ASSESSMENT & MID-TERM BREAK (11/04/2025 - 21/04/2025)** |
|  **ORGANIC CHEMISTRY** | 3.1Introduction to organic chemistry | To prepare students to compare organic chemistry with inorganic chemistry |  | 4TH | 04 | Tanzania Institute of Education (2022), Chemistry for Secondary Schools, Book four, TIE, DSM.* SCSU &MoEVT
 | Organic and inorganic  | Oral questions |  |
| compounds |
| To lead students to discuss the importance of organic chemistry | **APRIL** | Samples of organic compounds | Oral questions |  |
| Prepare student to discuss the origin of organic compounds | Synthetic organic compounds | Homework  |  |
| To prepare students to discuss the fractional distillation of crude oil | Chart of fractional distillation | Assignment  |  |
| 3.2 Hydrocarbons | Lead students to discuss the classification and homologous series of hydrocarbons | 08 | Chart of classes and series of homologous of hydrocarbons | Test  |  |
| To guide students to discuss on the Isomerism, Isomers, general formula of hydrocarbons. | **MAY** | 1ST | Isomers of hydrocarbons | Quiz  |  |
| 3.3Properties of hydrocarbons | To prepare students to discuss on the physical properties, saturated/ unsaturated and chemical properties of hydrocarbons | 2ND  | 08 | Chart of saturated or unsaturated and properties of hydrocarbons | Exercise |  |
| 3.4Alcohols | To prepare students to discuss on the Lab. Prep. Of Ethanol, homologous series, structures of isomers properties of alcohol their uses and the harmful effects of alcohol | 3rd & 4th | Charts of isomers, yeast, H2O and sugar | Homework |  |
|  | 3.5 Carboxylic acids | To prepare students to find out sources of acids, discuss on the oxidation of ethanol, homologous series, properties and soap preparation | 08 | NaOH, Na2CO3, NaHCO3, acids and soap | Quiz |  |
| **TERMINAL ASSESSMENT & FIRST TERM BREAK (06/06/2025 - 07/07/205)** |
| **SOIL CHEMISTRY** | 3.1 Soil Formation | To prepare students to discuss the process soil formation and factors  | **JULY** | 2ND | 08 |  | Soil samples of different end types marble Dilute acid | Assignment |  |
| 3.2 Soil Reaction | To prepare students to discuss the concept of soil reaction, its causes, and effects to plant growth and how to measure pH of the soil. To guide students to manage the soil pH by liming. | 3RD | 04 | pH meter soil pH Kit samples of soil Liming material | Test |  |
| 3.3Plant nutrients in the soil | prepare students to discuss on the microelements and macro elements | 4TH | 04 |  | Chart showing soil nutrients | Exercise |  |
| 3.4Manure and fertilizers | prepare a discussion on* Preparation of composite manure
* Advantages and elements of natural manure
* Types of fertilizers.
* Fertilizer grackles and analysis
* Methods of fertilizer application
 | Samples of composite manure fertilizers (NPK, MSP, DSP, TSP Urea, CAN Superphosphate. Natural Manure | Homework |  |
| 3.5Soilfertility and productivity | prepare students to discuss about the soil fertility and productivity | Samples or plots of soil fertile and productive soil. | Quiz |  |
| **4. POLLUTION** | 4.1 Concept of pollution | prepare students to discuss the meaning of pollution land give examples of pollution in real life situations | **AUGUST** | 1ST | 04 | TIE(2022), Chemistry for Secondary Schools, Book four, TIE, DSM. | Charts and pictures of pollution | Homework  |  |
| 4.2 Terrestrial pollution | prepare a discussion on;* Human activities which cause terrestrial pollution
* Hazards caused by terrestrial pollution
* Methods of preventing terrestrial pollution
 | Tanzania Institute of Education (2022), Chemistry for Secondary Schools, Book four, TIE, DSM. | Land pollution | Exercise |  |
| 4.3 Aquatic pollution | prepare students to discuss on;* Human activities which cause water pollution
* Hazards which are caused by water pollution
* Ways of preventing water pollution
 | 2ND | 04 | Water pollution | Homework |  |
| 4.4 Aerial pollution | Organize students to discuss on * Human activities causes aerial pollution
* Hazards caused by air pollution
* Methods of preventing air pollution

Control/preventive measures of air pollution | Air pollution | Quiz |  |
|  | 4.5 Environmental conservation | prepare students to * Discuss the meaning of environmental conservation.

- Guide students to plant flowers and tree, clean the environment and conserve the environments |  3rd4TH | 04 | Pictures of un-conserved and conserved environment | Assignment |  |
| 4.6 Global warming | prepare a discussion on:* Meaning of global warming and green house effect
* Green house gases
* Climatic condition caused by global warming

Ways of preventing global warming | Pictures to illustrate the green house effects, hurricanes, deserts floods | Test |  |
| 4.7. O-zone layer Destruction | To discuss on:* Meaning and significance of the Ozone layer.
* How ozone layer is destroyed
* Protective methods of Ozone layer
 | 04 | Charts illustrates Ozone layer destruction | Exercise |  |
| **MID-TERM ASSESSMENT & MID-TERM BREAK (29/08/2025 - 14/09/2025)** |
| **5. QUALITATIVE ANALYSIS**  | 5.1 The concept of qualitative Analysis | To prepare a discuss on the meaning and importance of qualitative analysis in real life | **SEPTEMBER** | 3RD | 04 | Tanzania Institute of Education (2022), Chemistry for Secondary Schools, Book four, TIE, DSM., | Apparatus for a qualitative analysis | Homework |  |
| 5.2 Qualitative analysis procedures | prepare students to practice the use of apparatus for qualitative analysis | 4 | Apparatus for qualitative analysis | ExerciseHomeworkQuizAssignmentTest |  |
| To prepare students to carry out preliminary test on an unknown sample |  | 4TH | Conc. H2SO4, DilHCl, SO42- Litmus, NO3-, HCO-3, NH4+, Cl-, CO32-, H2O | Exercise |  |
| prepare student to prepare solutions from soluble and insoluble salts | Distilled H2O, Dil. HCl, HNO3, CO32-, NO3-, SO42-, NH4, HCO3- | Homework |  |
| prepare students to carry out experiments to precipitate Cu2+, Fe2+, Fe3+, Ca2+, Pb2+, Zn2+ | NaOH, NH4OH, KI, K, Ferro, Ferri, solutions | Quiz |  |
| prepare students to confirm the identified ions. | BaCl2, NaOH, HCl, NH4OH, MgSO4, NH4 Oxalate. | Assignment |  |
| **PREPARATION FOR CERTIFICATE OF SECONDARY EDUCATION EXAMINATION 2025****(OCTOBER 1ST WEEK TO NOVEMBER 1ST WEEK)** |