**CHEMISTRY SCHEMES OF WORK FORM 3**

**TERM 2**

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **T/L ACTIVITIES** | **T/L AIDS** | **REFERENCE** | **REMARKS** |
| 1 | **Opening of School** | | | | | | | |
| 2 | 1 | ORGANIC CHEMISTRY (I) | Hydrocarbons | By the end of the lesson, the learner should be able to:  To define organic Chemistry. To define a hydrocarbon. To identify groups of hydrocarbons. To describe the carbon atom. | Discuss composition of the carbon atom; hence deduce number of valence electrons. Exposition of new terms. | student book | K.L.B. BK III  P. 92 Longhorn  Book III P 135 |  |
| 2 | ORGANIC CHEMISTRY (I) | Alkanes.  Naming Alkanes. | By the end of the lesson, the learner should be able to:  To identify various alkanes. To list sources of alkanes. To state uses of different fractions of crude oil. To define cracking of alkanes.  To define a homologous series. | Expose various alkanes. Discuss the biomass digester, fractional distillation of crude oil and uses of the fractions. Discuss the cracking process. Discussion and exposition of new concepts. | Chart of biomass digester. student book | K.L.B. BK III  PP. 93-94   Longhorn  Book III PP 135-6 |  |
| 3 | ORGANIC CHEMISTRY (I) | Members of Alkane series. | By the end of the lesson, the learner should be able to:  To name members of alkane series and identify their characteristics. To draw the structures of alkane series. | Discussion and exposition of new concepts. | Chart- structure of alkanes. | K.L.B. BK III  PP. 97-99  Longhorn Book III PP 137-9 |  |
| 4 | ORGANIC CHEMISTRY (I) | Isomerism in alkanes. | By the end of the lesson, the learner should be able to:  To draw and name isomers of simple hydrocarbons. | Discussion and exposition of new concepts. | Models. | K.L.B. BK III  PP. 101-102 Longhorn Book III PP 141-2 |  |
| 5 | ORGANIC CHEMISTRY (I) | Laboratory preparation of a given alkane. Trend in physical properties of alkanes. | By the end of the lesson, the learner should be able to:  To describe laboratory preparation of a given alkane. To state physical properties of the gases prepared. To describe the trend in physical properties of alkanes. | Teacher demonstration. Discussion. Study a table of comparative properties of alkanes. Make deductions from the table. | Sodium ethanoate, sodalime, Pestle and mortar. student book | K.L.B. BK III  P. 103  Longhorn  Book III PP 146 |  |
| 3 | 1 | ORGANIC CHEMISTRY (I) | Chemical properties of alkanes. | By the end of the lesson, the learner should be able to:  Describe chemical properties of alkanes. | Discussion  Examples of balanced equations. | student book | K.L.B. BK III  P. 107 Longhorn  Book III PP 148-9 |  |
| 2 | ORGANIC CHEMISTRY (I) | Substitution reactions involving alkanes. Uses of alkanes. | By the end of the lesson, the learner should be able to:  To describe substitution reactions involving alkanes.  To list down uses of alkanes. | Discussion   Teacher elucidates uses of alkanes. | student book | K.L.B. BK III  P. 108  Longhorn  Book III PP 149-50 |  |
| 3 | ORGANIC CHEMISTRY (I) | Alkenes. Molecular formulae of alkenes. Naming alkenes. | By the end of the lesson, the learner should be able to:  To write molecular formulae of alkenes.  To name various alkenes. | Examine table of members of alkenes. To identify members of alkene series. Q/Q: Nomenclature in alkenes. Compare alkenes; hence deduce names of various alkenes. | student book | K.L.B. BK III  PP 153-4 |  |
| 4 | ORGANIC CHEMISTRY (I) | Alkene isomerism. | By the end of the lesson, the learner should be able to:  Differentiate between branching and positional isomerism. | Discussion and drawing of molecular structures. | student book | K.L.B. BK III  P. 113 Longhorn  Book III PP 158-60 |  |
| 5 | ORGANIC CHEMISTRY (I) | Preparing ethene in the lab. | By the end of the lesson, the learner should be able to:  To describe lab preparation of ethene. | Teacher demonstration: - Carry out tests on ethene as students note down the observations in a table. | chart | K.L.B. BK III  P 162 |  |
| 4 | 1 | ORGANIC CHEMISTRY (I) | Physical properties of ethene. | By the end of the lesson, the learner should be able to:  To describe physical properties of ethene and other alkenes. | To discuss physical properties of ethene and other alkenes. | student book | K.L.B. BK III  PP. 116-117 Longhorn Book III PP 126-129 165-6 |  |
| 2 | ORGANIC CHEMISTRY (I) | Chemical properties of ethene. Alkenes and oxidizing agents. | By the end of the lesson, the learner should be able to:  To explain halogenation and hydrogenation reactions. To describe reactions of alkenes with oxidizing agents. | Discussion and drawing structures.  Review the double bonds in alkenes. Review reduction process, oxidizing agent. Discuss reactions of alkenes with conc. H2SO4, acidified potassium chromate. Expose hydrolysis process. | charts | KLB BK III PP. 118-119 Longhorn  Book III PP 166-8 |  |
| 3 | ORGANIC CHEMISTRY (I) | Uses of alkenes & Topic review. | By the end of the lesson, the learner should be able to:  To list down uses of alkenes. | Teacher elucidates uses of alkenes.  Assignment. | charts | K.L.B. BK III  P. 121 Longhorn Book  PP 170-1 |  |
| 4 | ORGANIC CHEMISTRY (I) | Alkynes. Nomenclature. | By the end of the lesson, the learner should be able to:  To identify various alkynes. To name and draw structures of alkynes. | Discuss a table of members of alkynes. Review naming of alkanes and alkene and compare this with naming of alkynes. | charts | K.L.B. BK III  P. 122-123 Longhorn  Book III PP 126-129 171-5 |  |
| 5 | ORGANIC CHEMISTRY (I) | Isomerism in alkynes. | By the end of the lesson, the learner should be able to:  To draw structure showing positional and branching isomerism. | Discussion and drawing structures. | charts | K.L.B. BK III  PP. 124-125 Longhorn  Book III PP 176-8 |  |
| 5 | 1 | ORGANIC CHEMISTRY (I) | Physical properties of ethyne. | By the end of the lesson, the learner should be able to:  To list down physical properties of ethyne. | Teacher demonstration: Preparation of ethyne. Deduce properties of other alkynes. | charts | K.L.B. BK III  PP. 125-126 Longhorn  Book III PP 197-80 |  |
| 2 | ORGANIC CHEMISTRY (I) | Chemical properties of ethyne. | By the end of the lesson, the learner should be able to:  To describe combustion, halogenation and hydrogenation processes. | Discussion and writing of equations. | charts | K.L.B. BK III  PP. 127-129 Longhorn Book III PP 180-184 |  |
| 3 | ORGANIC CHEMISTRY (I)  NITROGEN & ITS COMPOUNDS. | Tests for alkynes. Uses of alkynes. Isolation of nitrogen from air. | By the end of the lesson, the learner should be able to:  To describe tests for alkynes and state uses of alkynes. Describe isolation of nitrogen from air. | Discussion and explanations. Assignment. Teacher demonstration, explanations and equations. | charts Aspirator, copper turnings, gas jar, combustion tube, trogh. | K.L.B. BK III  P.130  Longhorn Book III PP 180-84 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Industrial production of nitrogen. | By the end of the lesson, the learner should be able to:  Describe industrial production of nitrogen. | Discussion and description. Drawing schematic diagram for the process. | charts | K.L.B. BK III  PP.135-136  Longhorn Book  PP 188-9 |  |
| 5 | NITROGEN & ITS COMPOUNDS. | Lab. preparation of nitrogen. | By the end of the lesson, the learner should be able to:  Describe lab preparation of nitrogen. | Teacher demonstration: Students? record observations made from tests on the gas. Writing equations of reactions. | Ammonium chloride, sodium nitrate | K.L.B. BK III  P. 137  Longhorn  Book III P 190-1 |  |
| 6 | 1 | NITROGEN & ITS COMPOUNDS. | Physical and chemical properties of nitrogen. Uses of nitrogen. | By the end of the lesson, the learner should be able to:  State physical and chemical properties of nitrogen.   List down uses of nitrogen. | Discussion and writing equations. | charts | K.L.B. BK III  P. 138  Longhorn  Book III PP 191-2 |  |
| 2 | NITROGEN & ITS COMPOUNDS. | Nitrogen (I) oxide. Lab preparation. | By the end of the lesson, the learner should be able to:  To describe Nitrogen (I) oxide. | Teacher demonstration: - Carry out tests on the gas. Students record observations in a table. Guided discussion. | Ammonium nitrate. | K.L.B. BK III  PP. 139-141  Longhorn  Book III PP 195-6 |  |
| 3 | NITROGEN & ITS COMPOUNDS. | Properties and uses of Nitrogen (I) oxide. | By the end of the lesson, the learner should be able to:  To list down physical properties of nitrogen (I) oxide. To describe chemical properties of nitrogen (I) oxide. To list down uses of nitrogen (I) oxide. | Q/A: Deductions from tests carried out. Discussion of chemical properties and writing of equations.  Teacher elucidates uses of nitrogen (1) oxide. | charts | K.L.B. BK III  P. 141 Longhorn  Book III PP 191-2 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Nitrogen (II) oxide. Lab preparation. | By the end of the lesson, the learner should be able to:  To describe lab preparation of nitrogen (II) oxide. | Class experiment: Preparation and carrying out tests on the gas. Observations recorded in a table. | Dil nitric acid, copper turnings. | K.L.B. BK III  P. 142 Longhorn  Book III PP 200-1 |  |
| 5 | NITROGEN & ITS COMPOUNDS. | Properties of the gas. Nitrogen (1V) oxide Lab preparation. | By the end of the lesson, the learner should be able to:  To list down physical properties of nitrogen (II) oxide To describe chemical properties of nitrogen (11) oxide To describe nitrogen (IV) oxide lab preparation. | Q/A: Deductions from tests carried out. Discussion of chemical properties and writing of equations. Carry out a confirmatory test for the presence of the gas. Teacher demonstration: - Preparation of the gas and corresponding equation. Tests on the gas and make observations. | charts Conc. nitric acid, copper turnings. | K.L.B. BK III  P. 143  Longhorn  Book III PP 192-200 |  |
| 7 | 1 | NITROGEN & ITS COMPOUNDS. | Properties of Nitrogen (IV) oxide. | By the end of the lesson, the learner should be able to:  To list down physical properties of nitrogen (IV) oxide To describe chemical properties of nitrogen (IV) oxide To state uses of nitrogen (1V) oxide. | Deduce physical properties from the table of observations. To describe chemical properties from the table of observations. Discuss uses of nitrogen (1V) oxide. | charts | K.L.B. BK III  PP. 144-147  Longhorn  Book III P 204 |  |
| 2 | NITROGEN & ITS COMPOUNDS. | Ammonia. Lab preparation of ammonia. | By the end of the lesson, the learner should be able to:  To describe lab preparation of ammonia | Q/A: Structure of ammonia. Group experiments: Preparation of ammonia. Tests on the gas. | Ca(OH)2, NH4Cl Solutions, CaO, litmus papers..M THREE CHEMISTRY TERM TWO 20.... | K.L.B. BK III  PP. 147-148 |  |
| 3 | NITROGEN & ITS COMPOUNDS. | Properties of ammonia. Solubility of ammonia. | By the end of the lesson, the learner should be able to:  To list down physical properties of ammonia. To describe an experiment to determine solubility of ammonia. | Deduce physical properties from the observations above. Discuss chemical properties from the observations above. Write down chemical equations.  Teacher demonstration. Discussion. | charts | K.L.B. BK III  P. 150 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Reaction of ammonia with metal ions. | By the end of the lesson, the learner should be able to:  To prepare aqueous solution of ammonia.   To carry out tests of aqueous ammonia on metal ions. | Teacher demonstration: - Preparation of aqueous solution of ammonia.  Class experiments: -  Students record observations when drops of aqueous ammonia are added, then in excess. | 2 cm Solutions containing various metal ions. | K.L.B. BK III  PP. 152-153 |  |
| 5 | NITROGEN & ITS COMPOUNDS. | Reaction of ammonia with metal ions. | By the end of the lesson, the learner should be able to:  To prepare aqueous solution of ammonia.   To carry out tests of aqueous ammonia on metal ions. | Teacher demonstration: - Preparation of aqueous solution of ammonia.  Class experiments: -  Students record observations when drops of aqueous ammonia are added, then in excess. | 2 cm Solutions containing various metal ions. | K.L.B. BK III  PP. 152-153 |  |
| 8 | Mid Term Exams and Break | | | | | | | |
| 9 | 1 | NITROGEN & ITS COMPOUNDS. | Ionic equations of above reactions. | By the end of the lesson, the learner should be able to:  To write iIonic equations of above reactions. | Discuss precipitation of metal hydroxides by aqueous ammonia. Confirmatory tests for various concentrations. | charts | K.L.B. BK III  P.154  Longhorn BK III P 223 |  |
| 2 | NITROGEN & ITS COMPOUNDS. | Burning ammonia in the air. Reaction of ammonia with copper (II) Oxide. | By the end of the lesson, the learner should be able to:  To describe burning ammonia in the air.  To name products formed when ammonia reacts with hot CuCl2 solid. To explain reducing properties of ammonia. | Teacher demonstration Discussion  Chemical equations of reactions. Teacher demonstration and discussion. Write down equations for the reactions. | Conc. Ammonium solution Hot platinum rod  Oxygen. Granular CuCl2 Combustion tube, Dry ammonia U-tube  Gas jar. | K.L.B. BK III  P. 158 Longhorn  Book III PP 219 |  |
| 3 | NITROGEN & ITS COMPOUNDS. | Haber process. | By the end of the lesson, the learner should be able to:  Identify raw materials for Haber process and how they are obtained in large scale.  Discuss the Haber process. Represent Haber process in a schematic diagram. | Discussion and explanations. | Chart- schematic diagram. | K.L.B. BK III  PP. 159-160 225-226 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Uses of ammonia. | By the end of the lesson, the learner should be able to:  To list down uses of ammonia. To list down nitrogenous fertilizers. | Teacher elucidates uses of ammonia and nitrogenous fertilizers. | charts | K.L.B. BK III  P. 161  Longhorn  Book III PP 126 -226 |  |
| 5 | NITROGEN & ITS COMPOUNDS. | Nitric acid. Lab preparation.  Nitric acid Industrial manufacture. | By the end of the lesson, the learner should be able to:  To describe lab preparation of nitric acid. To describe industrial manufacture of nitric acid. | Teacher demonstration. Write equations of reaction. Discussion. Discussion and writing equations. | Retort stand Conc. H2SO4 KNO3 Chart Schematic diagram. | K.L.B. BK III  P. 163 |  |
| 10 | 1 | NITROGEN & ITS COMPOUNDS. | Reaction of dilute Nitric acid with metals. | By the end of the lesson, the learner should be able to:  To describe reaction of dilute nitric acid with metals. To write equations of reactions of dilute nitric acid with metals. | Class experiment:- making observations and recording them in a table. Discuss the observations. Write down equations for the reactions. | Magnesium  Zinc Copper | K.L.B. BK III  PP. 165-166  Longhorn  Book III PP 166-8 |  |
| 2 | NITROGEN & ITS COMPOUNDS. | Reaction of dilute Nitric acid with metals. | By the end of the lesson, the learner should be able to:  To describe reaction of dilute nitric acid with metals. To write equations of reactions of dilute nitric acid with metals. | Class experiment:- making observations and recording them in a table. Discuss the observations. Write down equations for the reactions. | Magnesium  Zinc Copper | K.L.B. BK III  PP. 165-166  Longhorn  Book III PP 166-8 |  |
| 3 | NITROGEN & ITS COMPOUNDS. | Nitric acid and carbonates.  Reaction of dil. nitric acid with hydrogen carbonates. | By the end of the lesson, the learner should be able to:  To describe action of nitric acid on carbonates and hydrogen carbonates. Write equations for reaction of dil. nitric acid with hydrogen carbonates. | Group experiments: - Action of Nitric acid on hydrogen carbonates. Discussion and corresponding equations. | Solutions of  Na2CO3 NaHCO3 ZnCO3 CuCO3 | K.L.B. BK III  P. 167  Longhorn  Book III 229-30 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Dilute nitric acid and metal hydroxides and oxides. | By the end of the lesson, the learner should be able to:  Predict results of reacting dilute nitric acid with metal hydroxides and oxides. | Group experiments & writing equations for the reactions. | Metal hydroxides. | K.L.B. BK III  P. 168  Longhorn  Book III PP 238-240 |  |
| 5 | NITROGEN & ITS COMPOUNDS. | Reaction of nitric acid as an oxidizing agent. | By the end of the lesson, the learner should be able to:  Describe reactions of nitric acid as an oxidizing agent. | Class experiments: -  Explain observations made. | Nitric acid acidified iron sulphate, sulphur, and copper metal. | K.L.B. BK III  PP. 169-170  Longhorn Book III PP 239 -240 |  |
| 11 | 1 | NITROGEN & ITS COMPOUNDS. | Uses of nitric acid & nitrates. | By the end of the lesson, the learner should be able to:  To state uses of nitrates. To describe preparation of nitrates. | Discussion Equations for the reactions for preparation of nitrates. | charts | K.L.B. BK III  P. 171   Longhorn Book III PP 240 |  |
| 2 | NITROGEN & ITS COMPOUNDS. | Action of heat on nitrates. | By the end of the lesson, the learner should be able to:  To write equations of decomposition of nitrates on heating. | Discuss above observations. Write relevant equations. | charts | K.L.B. BK III  P 172 |  |
| 3 | NITROGEN & ITS COMPOUNDS. | Test for nitrates. | By the end of the lesson, the learner should be able to:  To carry out tests on nitrates. | Class experiments. Make observations and deductions. Discuss the brown ring test for nitrates. | charts | K.L.B. BK III  PP 173-174  Longhorn  Book III PP 243 |  |
| 4 | NITROGEN & ITS COMPOUNDS. | Test for nitrates. | By the end of the lesson, the learner should be able to:  To carry out tests on nitrates. | Class experiments. Make observations and deductions. Discuss the brown ring test for nitrates. | charts | K.L.B. BK III  PP 173-174  Longhorn  Book III PP 243 |  |
| 5 | NITROGEN & ITS COMPOUNDS. SULPHUR AND ITS COMPOUNDS | Nitrogen compounds and the environment. Extraction of sulphur. | By the end of the lesson, the learner should be able to:  To explain the pollution of nitrogen compounds in the environment. To state ways of reducing environmental pollution by nitrogen compounds. To describe extraction of sulphur by Frasch process. | Brief guided discussion. Illustrate and discuss extraction of sulphur. | charts Chart-the Frasch process. | K.L.B.BK III  PP. 173-174  Longhorn  Book III PP 244-6 |  |
| 12 | 1 | SULPHUR AND ITS COMPOUNDS | Allotropes of sulphur. | By the end of the lesson, the learner should be able to:  To identify allotropes of sulphur. To describe preparation of allotropes of sulphur. | Discussion and exposition of new concepts. | video | K.L.B. BK III  PP. 182-183 Longhorn Book  PP 126-129 |  |
| 2 | SULPHUR AND ITS COMPOUNDS | Physical properties of sulphur. Heating of sulphur. | By the end of the lesson, the learner should be able to:  To list physical properties of sulphur.  To describe effects of heat on sulphur. | Class experiment: Solubility of sulphur in water, benzene, e.t.c,. Class experiments:  Heating sulphur gently then strongly. Discuss the observations. | charts | K.L.B. BK III  P.184  Longhorn I Book III PP 253-255 |  |
| 3 | SULPHUR AND ITS COMPOUNDS | Chemical properties of sulphur. | By the end of the lesson, the learner should be able to:  To investigate and describe chemical properties of sulphur. | Group experiments. Discuss observations. Write corresponding equations. | charts | K.L.B.BK III  PP.188-190 Longhorn  Book III PP 256-8 |  |
| 4 | SULPHUR AND ITS COMPOUNDS | Uses of sulphur. Sulphur dioxide. | By the end of the lesson, the learner should be able to:  State uses of sulphur. Describe lab. preparation of sulphur dioxide. | Teacher elucidates uses of sulphur. Teacher demonstration:- Preparation of sulphur dioxide in a fume chamber/in the open. Carrying out tests on the gas. | charts | K.L.B.BK III  PP 191- 192 Longhorn Book  P 258 |  |
| 5 | SULPHUR AND ITS COMPOUNDS | Physical properties of sulphur dioxide. | By the end of the lesson, the learner should be able to:  To list down physical properties of sulphur dioxide. | Discuss the above tests. | text book | K.L.B.BK III  PP 193 Longhorn  Book III PP 262-3 |  |
| 13-14 | **End Term Exam and Closing** | | | | | | | |