**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. 92Longhorn Book IIIP 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 IIIPP 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. 97-99Longhorn Book IIIPP 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 IIIPP 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. 103Longhorn Book IIIPP 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. 107Longhorn Book IIIPP 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.  | DiscussionTeacher elucidates uses of alkanes.  | student book  | K.L.B. BK III P. 108Longhorn Book IIIPP 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. 113Longhorn Book IIIPP 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. 116-117Longhorn Book IIIPP 126-129165-6  |  |
| 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 IIIPP. 118-119Longhorn Book IIIPP 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. 122-123Longhorn Book IIIPP 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. 124-125Longhorn Book IIIPP 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. 125-126Longhorn Book IIIPP 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. 127-129Longhorn Book IIIPP 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.  | chartsAspirator, copper turnings, gas jar, combustion tube, trogh.  | K.L.B. BK III P.130Longhorn Book IIIPP 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.135-136Longhorn 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. 137Longhorn Book IIIP 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. 138Longhorn Book IIIPP 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. 139-141Longhorn Book IIIPP 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. 141Longhorn Book IIIPP 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. 142Longhorn Book IIIPP 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) oxideTo describe chemical properties of nitrogen (11) oxideTo 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.  | chartsConc. nitric acid, copper turnings.  | K.L.B.BK III P. 143Longhorn Book IIIPP 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) oxideTo describe chemical properties of nitrogen (IV) oxideTo 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. 144-147Longhorn Book IIIP 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.154Longhorn BK IIIP 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 demonstrationDiscussion Chemical equations of reactions.Teacher demonstration and discussion.Write down equations for the reactions.  | Conc. Ammonium solutionHot platinum rod Oxygen.Granular CuCl2Combustion tube,Dry ammoniaU-tube Gas jar.  | K.L.B.BK III P. 158Longhorn Book IIIPP 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. 159-160225-226  |  |
| 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. 161Longhorn Book IIIPP 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 standConc. H2SO4KNO3ChartSchematic 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 ZincCopper  | K.L.B. BK III PP. 165-166Longhorn Book IIIPP 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 ZincCopper  | K.L.B. BK III PP. 165-166Longhorn Book IIIPP 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 Na2CO3NaHCO3ZnCO3CuCO3  | K.L.B. BK III P. 167Longhorn Book III229-30  |  |
| 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. 168Longhorn Book IIIPP 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. 169-170Longhorn Book IIIPP 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.  | DiscussionEquations for the reactions for preparation of nitrates.  | charts  | K.L.B. BK III P. 171 Longhorn Book IIIPP 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 173-174Longhorn Book IIIPP 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 173-174Longhorn Book IIIPP 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.  | chartsChart-the Frasch process.  | K.L.B.BK III PP. 173-174Longhorn Book IIIPP 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. 182-183Longhorn 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 IBook IIIPP 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.188-190Longhorn Book IIIPP 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- 192Longhorn 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 193Longhorn Book IIIPP 262-3 |  |
| 13-14 | **End Term Exam and Closing**  |