**CHEMISTRY SCHEMES OF WORK**

**FORM FOUR 2016**

**TERM I**

**REFERENCES:**

1. Secondary Chemistry students book 4 By KLB
2. Longhorn Secondary Chemistry Form 4 By Longhorn Publishers
3. Principles of Chemistry Form 4 By P. Muchiri (POC)

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| 1 | 1-5 | **REPORTING AND REVISION OF LAST TERM’S EXAMINATIONS** | | | | |  |
| 2 | 1 | Energy changes in physical and chemical processes  Exothermic and endothermic reactions | **By the end of the lesson the learner should be able to:-**  Define exothermic and endothermic reactions using ∆H notations | Carrying out experiment table 2.1 (KLB Pg 33)  Reading temperature changes ∆T  Attempting exercise 2.1 | Boiling tubes  Thermometer  Glass rod  NH4NO3(g)  H2O | KLB BK 4 Pg 33-34  Longhorn Chem  BK 4 Pg 47-52  Gateway Chem Rev.  Pg 161-162  POC BK 4 Pg 65-68 |  |
|  | 2 | Energy level diagrams  Units for heat and energy and symbol | **By the end of the lesson the learner should be able to:-**  Draw simple energy level diagrams for exothermic and endothermic processes | Drawing energy level diagrams for the processes in exothermic | Graph papers | KLB BK 4 Pg 34-35  Longhorn Chem  BK 4 Pg 47-52  POC BK 4 Pg 69-71 |  |
|  | 3 | Energy changes  Molar heat of fusion and vaporization | **By the end of the lesson the learner should be able to:-**  Relate joules (J) to KiloJoules (KJ)  Explain fusion and vaporization as evidence of inter-particles forces | Carrying out an experiment  Attempting self assessment exercises  Discussing latent heat of fusion/vaporization | Stop watch  Bunsen burner  Thermometer  Ice  Wire gauze | KLB BK 4 Pg 36-40  Longhorn Chem  BK 4 Pg 54-57  POC BK 4 Pg 72 |  |
|  | 4 | Energy Changes in Chemical Processes | **By the end of the lesson the learner should be able to:-**  Explain that heat energy changes in chemical reactions are due to bond formation and bond breaking | Discussing bond breaking and bond formation  Bond energies  ∆H Products - ∆H Reactants  Calculating enthalpy of formation of HCl using bond energies | Supervised  Practice questions | KLB BK 4 Pg 41-45  Longhorn Chem  BK 4 Pg 57-63  POC BK 4 Pg 76-80 |  |
|  | 5 | Energy Changes in Chemical Processes | **By the end of the lesson the learner should be able to:-**  Calculate the heat of reaction between methane and chlorine | Attempting revision exercise and worked examples | Beaker  Thermometer  Burner | KLB BK 4 Pg 33-34  Longhorn Chem  BK 4 Pg 45-46  POC BK 4 Pg |  |
| 3 | 1 | Energy changes in physical and chemical processes  Types of heat changes | **By the end of the lesson the learner should be able to:-**  Calculate the heat of reaction  Define and explain various types of heat changes (standard enthalpy and standard conditions) | Discussing and writing definitions for:  Molar heat of fusion, neutralization, formation, displacement, combustion and solution | Beaker  Thermometer  Burner | KLB BK 4 Pg 46-50  Longhorn Chem  BK 4 Pg 65-70  POC BK 4 Pg 82 |  |
|  | 2 | Determining enthalpies through experiment | **By the end of the lesson the learner should be able to:-**  Determine molar enthalpy of:  Displacement, Neutralization  Writing correct simple thermo chemical equations | Working through examples  Attempting self assessment exercise | Supervised practice  Questions | KLB BK 4 Pg 50-54  Longhorn Chem  BK 4 Pg 75  POC BK 4 Pg 85 |  |
|  | 3&4 | Determining enthalpies through experiment | **By the end of the lesson the learner should be able to:-**  Determine molar enthalpy of:  Displacement, Neutralization  Writing correct simple thermo chemical equations | Working through examples  Attempting self assessment exercise | Supervised practice  Questions | KLB BK 4 Pg 50-54  Longhorn Chem  BK 4 Pg 75  POC BK 4 Pg 85 |  |
|  | 5 | Revision | **By the end of the lesson the learner should be able to:-**  Calculate enthalpies using experimental data and provided data | Working through examples  Attempting self assessment exercise | Supervised practice | KLB BK 4 Pg 71-72  Longhorn Chem  BK 4 Pg 74-84  POC BK 4 Pg 110 |  |
| 4 | 1 | Energy Changes  Hess law of constant heat summation | **By the end of the lesson the learner should be able to:-**  State Hess’ law and carry out related calculations | Discussing the worked examples on thermo chemical cycles for formation of CO2, CH4, CH3CH2OH  Relation between solution, hydration and lattice energy | Balance  Thermometer  Spirit lamp  Draught shield  Water  Ethanol  Tripod stand | KLB BK 4 Pg 60-63  Longhorn Chem  BK 4 Pg 85-95  POC BK 4 Pg 93 |  |
|  | 2 | Energy diagrams and activation energy | **By the end of the lesson the learner should be able to:-**  Show graphically the activation energy for exothermic and endothermic reactions  Define activation energy | Sketching energy level diagram for exothermic and endothermic reactions | Lagged beaker  Thermometer  Measuring cylinder  Glass rod  1g Zn(s) powder  0.2M CUSO4 | KLB BK 4 Pg 70-71  Longhorn Chem  BK 4 Pg 83-84  POC BK 4 Pg 94 |  |
|  | 3 | Relation between heat of solution, hydration and lattice energy | **By the end of the lesson the learner should be able to:-**  Define the terms:  Heat of solution  Hydration energy  Lattice energy | Drawing energy level diagrams and thermo chemical cycles  Attempting calculations based on;  ∆HSoln = ∆HLatt + ∆HHyd | Worked example | KLB BK 4 Pg 68-70  Longhorn Chem  BK 4 Pg 85-95  POC BK 4 Pg 101 |  |
|  | 4 | Energy content of common fuels | **By the end of the lesson the learner should be able to:-**  Name solid, liquid and gaseous fuels  State criteria for choosing a fuel | Calculating the heating value of fuels | Charts in energy diagrams and thermo chemical cycles | KLB BK 4 Pg 95-98  Longhorn Chem  BK 4 Pg 70-73  POC BK 4 Pg 105 |  |
|  | 5 | Pollution of the environment by common fuels | **By the end of the lesson the learner should be able to:-**  Name pollutants formed when hydrocarbon fuels are burnt | Discussing acid oxides, acid rain, stating the measures to reduce pollution | Writing summary notes | KLB BK 4 Pg 73-74  Longhorn Chem  BK 4 Pg 94-98  POC BK 4 Pg 106 |  |
| 5 | 1 | Rates of Reaction and Reversible Reactions  Introduction | **By the end of the lesson the learner should be able to:-**  Define rate of reaction  Describe some methods used to measure rates of reaction | Discussing observation used to measure rate of a reaction  Volume of gas, mass of product  Decrease in mass of reactants  Change of colour | Charts  Chemical equations | KLB BK 4 Pg  Longhorn Chem  BK 4 Pg 105-112  POC BK 4 Pg 118 |  |
|  | 2 | Collision theory and activation energy | **By the end of the lesson the learner should be able to:-**  Explain the term activation energy | Discussing activation energy, collision theory, review kinetic theory | Copies of KLB and Longhorn students books | KLB BK 4 Pg 85-89  Longhorn Chem  BK 4 Pg 105-108  POC BK 4 Pg 120 |  |
|  | 3&4 | Factors affecting rates of reaction | **By the end of the lesson the learner should be able to:-**  Explain the effects of concentration of reactants (aqueous reactants), pressure (gaseous), temperature | Carrying out demonstrations  Drawing graphs on rate representation | Na2S2O3  Stop watch  HCl, White paper  Beakers  Stirring rods | KLB BK 4 Pg 83  Longhorn Chem  BK 4 Pg 112-114  POC BK 4 Pg 122 |  |
|  | 5 | Factors affecting rates of reaction | **By the end of the lesson the learner should be able to:-**  Explain the effects of temperature on rate of reaction  Explain the effect of light on rate of reaction | Experiment  Drawing graphs  Class discussion | KBr  AgNO3  Large tubes | KLB BK 4 Pg 85-86  Longhorn Chem  BK 4 Pg 108-112  POC BK 4 Pg 123 |  |
| 6 | 1 | Factors affecting rate of reaction | **By the end of the lesson the learner should be able to:-**  Explain the effects of surface area on rate of reaction | Experiment  Drawing graphs  Class discussion | Conical flask, stop watch, balance, cotton wool, HCl, marble chips, marble powder | KLB BK 4 Pg 83-85  Longhorn Chem  BK 4 Pg 114-117  POC BK 4 Pg 129 |  |
|  | 2 | Factors affecting rates of reaction | **By the end of the lesson the learner should be able to:-**  Explain the effect of catalyst and light on rate of reaction | Class experiment  Self assessment exercise  Class discussion | Conical flask, stop watch, balance, cotton wool, HCl, marble chips, marble powder | KLB BK 4 Pg 85-86  Longhorn Chem  BK 4 Pg 117-121  POC BK 4  Pg 133-135 |  |
|  | 3 | Introduction  Reversible reactions | **By the end of the lesson the learner should be able to:-**  State atleast 3 examples of reversible reactions  Define chemical equilibrium | Experiment  Attempting self assessment exercise  *© Education Plus Agencies* | 250cm3 beaker  White tile  Stop watch  Na2S2O3  2M HCl  Graph paper | KLB BK 4 Pg 93-95  Longhorn Chem  BK 4 Pg 123-126  POC BK 4 Pg 137 |  |
|  | 4&5 | Reversible reactions and equilibrium | **By the end of the lesson the learner should be able to:-**  Describe equilibrium position  Shifting the equilibrium position | Demonstration  Attempting assessment exercise | Balance  Conical flask  Cotton wool  Stop watch  CaCO3 | KLB BK 4 Pg 93-95  Longhorn Chem  BK 4 Pg 122-126  POC BK 4 Pg 139 |  |
| 7 | 1 | Effects of changing pressure on equilibrium position  Le Chatelier’s principle | **By the end of the lesson the learner should be able to:-**  Answer almost all questions in the exercise correctly  State and explain effects of change in pressure on equilibrium position  State Le chatelier’s principle | Class discussion  Writing equations | Boiling tubes  20V H2O2  MnO2 powder  Balance  Filter paper and funnel | KLB BK 4  Pg 102-107  Longhorn Chem  BK 4 Pg 130-136  POC BK 4 Pg 141 |  |
|  | 2 | Electro-chemistry  Introduction  (Redox Reaction) | **By the end of the lesson the learner should be able to:-**  Answer all/most questions in the exercises correctly | Writing summary notes  Writing questions and answers to revision questions | Phenolphthalein solution  100cm3 glass  Beaker  White tiles  2M NaOH | KLB BK 4  Pg 105-107  Longhorn Chem  BK 4 Pg 72-74  POC BK 4  Pg 158-161 |  |
|  | 3&4 | Electro-chemistry  Introduction  (Redox Reaction) | **By the end of the lesson the learner should be able to:-**  Explain redox reaction in terms of gain and loss of electrons  Identify changes in oxidation numbers during redox reactions | Determining oxidation numbers  Writing rules on oxidation number  Attempting assessment exercises | Group discussion | KLB BK 4  Pg 113-115  Longhorn Chem  BK 4 Pg 147-150  POC BK 4  Pg |  |
|  | 5 | Displacement reaction and redox reaction | **By the end of the lesson the learner should be able to:-**  Write balanced redox reactions  Compare oxidizing and reducing power of ions | Writing redox reactions showing:  Metal as reducing agent  Non-metal as oxidizing agent | Chart showing redox equation  Half reaction (ionic equation) for redox | KLB BK 4  Pg 113-115  Longhorn Chem  BK 4 Pg 147-150  POC BK 4 Pg 167 |  |
| 8 | 1 | Electrochemical Cell | **By the end of the lesson the learner should be able to:-**  Explain the working of an electrochemical cell in terms of electron transfer process and ion migration (slat bridge) | Demonstrating experiment  Discussion redox in Zn/Cu cell diagram  Writing cell representation and measuring e.m.f. of various cells | 2 beakers  Filter paper  Cotton wool  Connecting wires  Voltmeter  Cu/ZnFe and their respective sulphate | KLB BK 4  Pg 116-117  Longhorn Chem  BK 4 Pg 150-155  POC BK 4  Pg 170-174 |  |
|  | 2 | Electrochemical Cell and standard electrode potential | **By the end of the lesson the learner should be able to:-**  Describe the simple hydrogen electrode  State the standard conditions | Writing a list of electrochemical series with corresponding electrodes potential | Chart on electrochemical series | KLB BK 4 Pg 118  Longhorn Chem  BK 4 Pg 155-159  POC BK 4  Pg 175-177 |  |
|  | 3&4 | Cell e.m.f.  Simple calculation using standard electrode potential  Eθ values | **By the end of the lesson the learner should be able to:-**  Calculate the e.m.f. of a cell using Eθ value | Discussing worked examples of e.m.f.  Calculating cell e.m.f. in self assessment | List of electrode potential and electrochemical series | Longhorn Chem  BK 4 Pg 152  POC BK 4 Pg 179 |  |
|  | 5 | Electrolysis | **By the end of the lesson the learner should be able to:-**  Define electrolysis  Explain the role of water in electrolysis | Carry out and experiment  Attempting exercises | Dilute H2SO4  Ammeter  Connecting wire  Graphite | KLB BK 4 Pg 122  Longhorn Chem  BK 4 Pg 162 |  |
| 9 | 1 | Preferential discharge of ions | **By the end of the lesson the learner should be able to:-**  State and explain factors that affect preferential discharge of ions  Write half ionic equations for reactions at electrodes | Discussing factors affecting preferential discharge of ions  Writing a summary of electrolysis of aqueous solutions | Battery  Carbon electrode  Connecting wire  Bulb  Test tube | KLB BK 4  Pg 122  Longhorn Chem  BK 4 Pg 168-172  POC BK 4  Pg 190 |  |
|  | 2 | Quantity of electrolysis | **By the end of the lesson the learner should be able to:-**  State faraday’s 1st law of electrolysis  Q = IT | Calculating amounts of elements discharged in electrolytic processes | Worked example | KLB BK 4 Pg 123  Longhorn Chem  BK 4 Pg 175  POC BK 4 Pg 199 |  |
|  | 3&4 | Application of Electrolysis | **By the end of the lesson the learner should be able to:-**  Describe the application of electrolysis  Write electrode half ionic equation for the process | Describe uses of electrolysis | Charts on electro plating  Mercury cell  Diaphragm | KLB BK 4  Pg 155-156  Longhorn Chem  BK 4 Pg 182 |  |
|  | 5 | Revision Exercise | **By the end of the lesson the learner should be able to:-**  Write correct answers to all/most questions in the revision exercises | Attempting revision exercises | Students textbooks | KLB BK 4 Pg 165  Longhorn Chem  BK 4 Pg 187-189  POC BK 4 Pg 212 |  |
| 10 | 1 | Metals  Occurrence of metal  Chief ores of metals | **By the end of the lesson the learner should be able to:-**  Name the chief ore of some metals (Al, Na, Fe, Zn, Cu) | Listing names of ores for the metals | Copies of tables | KLB BK 4  Pg 168-169  Longhorn Chem  BK 4 Pg 195-197, 201, 204, 206  POC BK 4 Pg 219 |  |
|  | 2&3 | Extraction of Sodium | **By the end of the lesson the learner should be able to:-**  Describe a suitable method of extraction of sodium  Describe and explain the extraction of sodium by Down’s Cell using electrolysis process  Name chief ore of sodium | Discussing groups of 3-5 and presenting  Describing the extraction process of Na by electrolysis | Chart showing Down’s cell | KLB BK 4  Pg 169-173  Longhorn Chem  BK 4 Pg 195-196  POC BK 4  Pg 219-225 |  |
|  | 4 | Physical and Chemical properties | **By the end of the lesson the learner should be able to:-**  Describe the physical and chemical properties of sodium (M.P, B.P, density and thermal conductivity)  Explain the chemical properties of sodium | Class discussion and presentation | Group work | KLB BK 4  Pg 197-198  Longhorn Chem  BK 4 Pg 218-225  POC BK 4  Pg 226-228 |  |
|  | 5 | Uses and environmental effects | **By the end of the lesson the learner should be able to:-**  State the uses of Na  Explain the environmental pollution brought about by Na metal and its by-products | Research and representation done by groups  Summary notes taking | Flow charts | KLB BK 4  Pg 186-190  Longhorn Chem  BK 4 Pg 218-225  POC BK 4  Pg 228-229 |  |
| 11 | 1 | Aluminium  Extraction | **By the end of the lesson the learner should be able to:-**  Describe the extraction method of Al  State the chief ore (bauxite) | Group discussion  Presentation of results  Summary notes taking | Flow chart | KLB BK 4 Pg 171  Longhorn Chem  BK 4 Pg 197-201  POC BK 4 Pg 229 |  |
|  | 2&3 | Physical Properties | **By the end of the lesson the learner should be able to:-**  Describe and explain physical properties of aluminium | Write the physical properties of aluminium, M.P, B.P, density and thermal conductivity | Table 5.9 (Longhorn) | KLB BK 4  Pg 182-183  Longhorn Chem  BK 4 Pg 215  POC BK 4 Pg 232 |  |
|  | 4 | Chemical Properties and uses of its alloys | **By the end of the lesson the learner should be able to:-**  State and explain the various uses of aluminium | Listing atleast 3 major uses of aluminium and its alloys  Relate uses of alloys to properties | Flow chart | KLB BK 4  Pg 186-190  Longhorn Chem  BK 4 Pg 215-225  POC BK 4 Pg 234 |  |
|  | 5 | Iron  Extraction | **By the end of the lesson the learner should be able to:-**  Describe the suitable method of extracting Iron  Name the chief ore of iron | Group discussions and presentations | Charts showing blast furnace | KLB BK 4 Pg 169  Longhorn Chem  BK 4 Pg 195 |  |
| 12 | 1 | Physical Properties | **By the end of the lesson the learner should be able to:-**  Describe and explain the physical properties of iron | Writing the physical properties of iron; M.P, B.P, density | Table 5.9 (Longhorn) | KLB BK 4 Pg 215  Longhorn Chem  BK 4 Pg 182-183  POC BK 4  Pg 239-242 |  |
|  | 2&3 | Chemical Properties | **By the end of the lesson the learner should be able to:-**  State and explain various uses of iron | Listing atleast 3 major uses of iron and its alloys  Writing respective chemical equations  Relate uses of alloys to properties | Teacher made flow chart | KLB BK 4  Pg 186-190  Longhorn Chem  BK 4 Pg 218-228  POC BK 4  Pg 238 |  |
|  | 4 | Environmental Pollution of Iron | **By the end of the lesson the learner should be able to:-**  State and explain any environmental pollution caused by iron and its by products | Discussing environmental effects of iron and its by products | Group discussion and presentations | KLB BK 4  Pg 197  Longhorn Chem  BK 4 Pg 226-227  POC BK 4  Pg 240 |  |
|  | 5 | Zinc  Extraction | **By the end of the lesson the learner should be able to:-**  Describe the concentration of the ore by froth floatation  Describe the reduction of the ore | Describe froth floatation and roasting  Writing chemical equation for the extraction of zinc | Flow chart of zinc | KLB BK 4  Pg 177-178  Longhorn Chem  BK 4 Pg 204  POC BK 4 Pg 249 |  |
| 13 | 1&2 | Physical and Chemical properties and uses | **By the end of the lesson the learner should be able to:-**  Describe and explain physical properties of zinc  State and explain various uses of zinc | Writing the physical properties of zinc; M.P, B.P, density, thermal conductivity  List major uses of zinc and its alloys | Flow chart | KLB BK 4  Pg 186  Longhorn Chem  BK 4 Pg 218  POC BK 4  Pg 252 |  |
|  | 3 | Environmental Effects | **By the end of the lesson the learner should be able to:-**  State and explain any environmental effects caused by zinc and its by-products | Discussing in groups and presenting findings in class | Group presentation | KLB BK 4  Pg 197  Longhorn Chem  BK 4 Pg 226  POC BK 4 |  |
|  | 4 | Copper  Extraction | **By the end of the lesson the learner should be able to:-**  Describe and explain the concentration of the ore by froth floatation  Describe the reduction of the ore | Discuss froth floatation  Write chemical equations for reactions in the reduction | Flow chart | KLB BK 4  Pg 181-182  Longhorn Chem  BK 4 Pg 226  POC BK 4 Pg 244 |  |
|  | 5 | Physical and Chemical Properties of Copper and uses | **By the end of the lesson the learner should be able to:-**  Describe the physical properties of copper  State and explain various uses of copper | Writing uses of copper, physical and chemical properties | Making notes | KLB BK 4 Pg 186  Longhorn Chem  BK 4 Pg 218  POC BK 4  Pg 247 |  |
| 14-15 | 1-5 | KCSE Format: Emphasize on acids, bases and salts.  Energy changes in physical and chemical processes  Rates of reaction and electrochemistry | **By the end of the lesson the learner should be able to:-**  Writing 3 exam papers  Paper 1 (theory)  Paper 2 (theory)  Paper 3 (practical) | KCSE sample papers  Top Mark Rev. Chem  Gateway Chem. Rev  Pg 261 | Group discussion |  |  |

**CHEMISTRY SCHEMES OF WORK**

**FORM FOUR 2016**

**TERM II**

**REFERENCES:**

1. Secondary Chemistry students book 4 By KLB
2. Longhorn Secondary Chemistry Form 4 By Longhorn Publishers
3. Principles of Chemistry Form 4 By P. Muchiri (POC)

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| 1 | 1-5 | **REPORTING AND REVISION OF LAST TERM’S EXAMINATIONS** | | | | |  |
| 2 | 1 | Metals  Copper  Pollution effects of copper  Extraction process | **By the end of the lesson the learner should be able to:-**  Describe the effects of the industrial production processes of copper on the environment | Writing notes on air pollution, water, land, noises  Describe techniques on reducing pollution effects | Group presentation | KLB BK 4  Pg 197-198  Longhorn Chem  BK 4 Pg 226-  POC BK 4  Pg 249 |  |
|  | 2 | Summary Notes  Assessment test revision exercises | **By the end of the lesson the learner should be able to:-**  Briefly describe concentration , reduction and purification | Writing own summary notes  Answers to assessment tests, revision exercises | Group presentation | Use revision books  Top Mark  Gateway Chem  Principles of Chem |  |
|  | 3&4 | Radioactivity  Stability of Isotopes of Elements | **By the end of the lesson the learner should be able to:-**  Define radioactivity, half-life, radio-isotopes and nuclides | Revising isotopes by giving examples  Defining RAM. Nuclides and distinction between nuclides and isotopes | Class discussion  Making notes | KLB BK 4 Pg  Longhorn Chem  BK 4 Pg 283  POC BK 4  Pg 325 |  |
|  | 5 | Types of Radioactivity and Radiations | **By the end of the lesson the learner should be able to:-**  State types of radioactivity  Name the particles emitted during radioactive decay and state their properties | Class discussion on the types of radiations  Emphasize on the change in mass and symbols of each types of radiation | Charts | KLB BK 4  Pg 210-212  Longhorn Chem  BK 4 Pg 285-288  POC BK 4  Pg 322-325 |  |
| 3 | 1&2 | Radioactive Decay and half-life | **By the end of the lesson the learner should be able to:-**  Carry out simple calculations involving half-life | Ensure the learner draws graphs  Explain the exponential nature of the curve and determine half-life from curve | Graph papers | KLB BK 4  Pg 288-291  Longhorn Chem  BK 4 Pg 289  POC BK 4  Pg 246 |  |
|  | 3 | Nuclear reaction and radioactive decay series | **By the end of the lesson the learner should be able to:-**  Write balanced nuclear equations | Write and balance nuclear equations | Textbooks | KLB BK 4 Pg 213  Longhorn Chem  BK 4 Pg 292-295 |  |
|  | 4 | Nuclear fission and fusion | **By the end of the lesson the learner should be able to:-**  Distinguish between nuclear fission and fusion | Class discussion | Charts and pictures | KLB BK 4  Pg 243-245  Longhorn Chem  BK 4 Pg 296  POC BK 4 Pg 325 |  |
|  | 5 | Applications and dangers of radioactivity | **By the end of the lesson the learner should be able to:-**  State the uses of radio-isotopes  State dangers associated with radioactivity | Class discussion  Group discussion | Manilla paper  Felt pens | KLB BK 4 Pg 243  Longhorn Chem  BK 4 Pg 300  POC BK 4  Pg 340-342 |  |
| 4 | 1 | Revision Questions | **By the end of the lesson the learner should be able to:-**  Answer questions on the topic | Group work  Revision questions | KCSE past papers  Revision questions | KLB BK 4 Pg 243  Longhorn Chem  BK 4 Pg 301  POC BK 4  Pg 340-342 |  |
|  | 2 | Revision  Identification of key revision areas | **By the end of the lesson the learner should be able to:-**  Take part in identification of key revision areas | Form 4 key topics to be handled in revision  Organic chemistry  Electro chemistry  Rates of reaction  Energy changes | KCSE revision past papers  Revision materials | KLB BK 4  Longhorn Chem  BK 4  POC BK 4 |  |
|  | 3-5 | Revision  Organic Chemistry | **By the end of the lesson the learner should be able to:-**  Revise through the topic both I and II | Class discussion and class presentations | Use of flow charts and revision papers | KLB BK 4 Pg 227  Longhorn Chem  BK 4 Pg 249-253 |  |
| 5 | 1-5 | Revision  Organic Chemistry | **By the end of the lesson the learner should be able to:-**  Revise through the topic both I and II | Class discussion and class presentations | Use of flow charts and revision papers | KLB BK 4 Pg 227  Longhorn Chem  BK 4 Pg 249-253 |  |
| 6-7 | 1-5 | Revision  Electrochemistry | **By the end of the lesson the learner should be able to:-**  Identify all areas of difficulty in the topic and be able to solve the questions involved | Writing questions and answers to revision exercises | Flow charts and revision papers | KCSE past papers  Past papers (District Mock papers) |  |
| 8-9 | 1-5 | Revision  Rates of Reaction | **By the end of the lesson the learner should be able to:-**  Identify all the areas of difficulty in the topic and be able to solve the difficult areas | Writing questions and answers to revision exercises | Revision papers | KCSE past papers  Past papers (District Mock papers) |  |
| 10-11 | 1-5 | Revision  Energy Changes | **By the end of the lesson the learner should be able to:-**  Identify problems in the topic  Give possible solutions to the problems | Drawing energy level diagrams  Practicals | Revision papers | KCSE past papers  Past papers (District Mock papers) |  |
| 12 | 1-5 | Revision  Practicals | **By the end of the lesson the learner should be able to:-**  Carry out experiments to collect data and analyze it correctly (Titration, quantitative analysis) | Class experiments | Laboratory apparatus for respective experiment | KCSE past papers  Chemistry manual |  |
| 13-14 |  | **EXAMINATIONS** | | | | |  |

**CHEMISTRY SCHEMES OF WORK**

**FORM FOUR 2016**

**TERM III**

**REFERENCES:**

1. Secondary Chemistry students book 4 By KLB
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| 1-2 | 1-5 | **Opening**  Revision of Form 1 Topics | **By the end of the lesson the learner should be able to:-**  Revise through the form 1 syllabus in the preparation for KCSE | Class discussion | Past Papers  Revision Books | KCSE Past Papers |  |
| 3-4 | 1-5 | Revision of Form 2 Topics | **By the end of the lesson the learner should be able to:-**  Revise through the form 2 syllabus in the preparation for KCSE | Class discussion  Group discussion  Practicals | KLB BK 2  Longhorn Chem BK 2  Principles of chem  BK 2 | KCSE Past Papers |  |
| 5-6 | 1-5 | Revision of Form 3 Topics | **By the end of the lesson the learner should be able to:-**  Revise through the form 3 syllabus in the preparation for KCSE | Class discussion  Group discussion  Practicals | KLB BK 3  Longhorn Chem BK 3 | KCSE Past Papers  Revision Books |  |
| 7-9 | 1-5 | Revision of Form 4 Topics  (Form 4 Work) | **By the end of the lesson the learner should be able to:-**  Revise through the form 4 syllabus in the preparation for KCSE | Class discussion  Group discussion  Practicals | Past Papers  Revision Books | KCSE Past Papers  Revision Books |  |
|  |  | **KCSE EXAMINATIONS** | | | | |  |