**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 processesExothermic 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 ∆TAttempting exercise 2.1 | Boiling tubesThermometerGlass rodNH4NO3(g)H2O | KLB BK 4 Pg 33-34Longhorn Chem BK 4 Pg 47-52Gateway Chem Rev.Pg 161-162POC BK 4 Pg 65-68 |  |
|  | 2 | Energy level diagramsUnits 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 34-35Longhorn Chem BK 4 Pg 47-52POC 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 experimentAttempting self assessment exercisesDiscussing latent heat of fusion/vaporization | Stop watchBunsen burnerThermometerIceWire gauze | KLB BK 4 Pg 36-40Longhorn Chem BK 4 Pg 54-57POC 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 formationBond energies∆H Products - ∆H ReactantsCalculating enthalpy of formation of HCl using bond energies | Supervised Practice questions | KLB BK 4 Pg 41-45Longhorn Chem BK 4 Pg 57-63POC 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 | BeakerThermometerBurner | KLB BK 4 Pg 33-34Longhorn Chem BK 4 Pg 45-46POC BK 4 Pg  |  |
| 3 | 1 | Energy changes in physical and chemical processesTypes of heat changes | **By the end of the lesson the learner should be able to:-**Calculate the heat of reactionDefine 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 | BeakerThermometerBurner | KLB BK 4 Pg 46-50Longhorn Chem BK 4 Pg 65-70POC 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, NeutralizationWriting correct simple thermo chemical equations | Working through examplesAttempting self assessment exercise | Supervised practiceQuestions | KLB BK 4 Pg 50-54Longhorn Chem BK 4 Pg 75POC 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, NeutralizationWriting correct simple thermo chemical equations | Working through examplesAttempting self assessment exercise | Supervised practiceQuestions | KLB BK 4 Pg 50-54Longhorn Chem BK 4 Pg 75POC 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 examplesAttempting self assessment exercise | Supervised practice | KLB BK 4 Pg 71-72Longhorn Chem BK 4 Pg 74-84POC BK 4 Pg 110 |  |
| 4 | 1 | Energy ChangesHess 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, CH3CH2OHRelation between solution, hydration and lattice energy | BalanceThermometerSpirit lampDraught shieldWaterEthanolTripod stand | KLB BK 4 Pg 60-63Longhorn Chem BK 4 Pg 85-95POC 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 reactionsDefine activation energy | Sketching energy level diagram for exothermic and endothermic reactions | Lagged beakerThermometerMeasuring cylinderGlass rod1g Zn(s) powder0.2M CUSO4 | KLB BK 4 Pg 70-71Longhorn Chem BK 4 Pg 83-84POC 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 solutionHydration energyLattice energy | Drawing energy level diagrams and thermo chemical cyclesAttempting calculations based on; ∆HSoln = ∆HLatt + ∆HHyd | Worked example | KLB BK 4 Pg 68-70Longhorn Chem BK 4 Pg 85-95POC 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 fuelsState criteria for choosing a fuel | Calculating the heating value of fuels | Charts in energy diagrams and thermo chemical cycles | KLB BK 4 Pg 95-98Longhorn Chem BK 4 Pg 70-73POC 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 73-74Longhorn Chem BK 4 Pg 94-98POC BK 4 Pg 106 |  |
| 5 | 1 | Rates of Reaction and Reversible ReactionsIntroduction | **By the end of the lesson the learner should be able to:-**Define rate of reactionDescribe some methods used to measure rates of reaction | Discussing observation used to measure rate of a reaction Volume of gas, mass of productDecrease in mass of reactants Change of colour | ChartsChemical equations | KLB BK 4 Pg Longhorn Chem BK 4 Pg 105-112POC 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 85-89Longhorn Chem BK 4 Pg 105-108POC 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 demonstrationsDrawing graphs on rate representation | Na2S2O3Stop watchHCl, White paperBeakersStirring rods | KLB BK 4 Pg 83Longhorn Chem BK 4 Pg 112-114POC 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 reactionExplain the effect of light on rate of reaction | ExperimentDrawing graphsClass discussion | KBrAgNO3Large tubes | KLB BK 4 Pg 85-86Longhorn Chem BK 4 Pg 108-112POC 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 | ExperimentDrawing graphsClass discussion | Conical flask, stop watch, balance, cotton wool, HCl, marble chips, marble powder | KLB BK 4 Pg 83-85Longhorn Chem BK 4 Pg 114-117POC 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 experimentSelf assessment exerciseClass discussion | Conical flask, stop watch, balance, cotton wool, HCl, marble chips, marble powder | KLB BK 4 Pg 85-86Longhorn Chem BK 4 Pg 117-121POC BK 4 Pg 133-135 |  |
|  | 3 | IntroductionReversible reactions | **By the end of the lesson the learner should be able to:-**State atleast 3 examples of reversible reactionsDefine chemical equilibrium | ExperimentAttempting self assessment exercise*© Education Plus Agencies* | 250cm3 beakerWhite tileStop watchNa2S2O32M HClGraph paper | KLB BK 4 Pg 93-95Longhorn Chem BK 4 Pg 123-126POC BK 4 Pg 137 |  |
|  | 4&5 | Reversible reactions and equilibrium | **By the end of the lesson the learner should be able to:-**Describe equilibrium positionShifting the equilibrium position | DemonstrationAttempting assessment exercise | BalanceConical flaskCotton woolStop watchCaCO3 | KLB BK 4 Pg 93-95Longhorn Chem BK 4 Pg 122-126POC BK 4 Pg 139 |  |
| 7 | 1 | Effects of changing pressure on equilibrium positionLe Chatelier’s principle | **By the end of the lesson the learner should be able to:-**Answer almost all questions in the exercise correctlyState and explain effects of change in pressure on equilibrium positionState Le chatelier’s principle | Class discussionWriting equations | Boiling tubes20V H2O2MnO2 powderBalanceFilter paper and funnel | KLB BK 4 Pg 102-107Longhorn Chem BK 4 Pg 130-136POC BK 4 Pg 141 |  |
|  | 2 | Electro-chemistryIntroduction(Redox Reaction) | **By the end of the lesson the learner should be able to:-**Answer all/most questions in the exercises correctly | Writing summary notesWriting questions and answers to revision questions | Phenolphthalein solution 100cm3 glassBeakerWhite tiles2M NaOH | KLB BK 4 Pg 105-107Longhorn Chem BK 4 Pg 72-74POC BK 4 Pg 158-161 |  |
|  | 3&4 | Electro-chemistryIntroduction(Redox Reaction) | **By the end of the lesson the learner should be able to:-**Explain redox reaction in terms of gain and loss of electronsIdentify changes in oxidation numbers during redox reactions | Determining oxidation numbersWriting rules on oxidation numberAttempting assessment exercises | Group discussion | KLB BK 4 Pg 113-115Longhorn Chem BK 4 Pg 147-150POC BK 4 Pg  |  |
|  | 5 | Displacement reaction and redox reaction | **By the end of the lesson the learner should be able to:-**Write balanced redox reactionsCompare oxidizing and reducing power of ions | Writing redox reactions showing:Metal as reducing agentNon-metal as oxidizing agent | Chart showing redox equationHalf reaction (ionic equation) for redox | KLB BK 4 Pg 113-115Longhorn Chem BK 4 Pg 147-150POC 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 experimentDiscussion redox in Zn/Cu cell diagramWriting cell representation and measuring e.m.f. of various cells | 2 beakersFilter paperCotton woolConnecting wiresVoltmeterCu/ZnFe and their respective sulphate | KLB BK 4 Pg 116-117Longhorn Chem BK 4 Pg 150-155POC 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 electrodeState the standard conditions | Writing a list of electrochemical series with corresponding electrodes potential | Chart on electrochemical series | KLB BK 4 Pg 118Longhorn Chem BK 4 Pg 155-159POC BK 4 Pg 175-177 |  |
|  | 3&4 | Cell e.m.f.Simple calculation using standard electrode potentialEθ 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 152POC BK 4 Pg 179 |  |
|  | 5 | Electrolysis | **By the end of the lesson the learner should be able to:-**Define electrolysisExplain the role of water in electrolysis | Carry out and experimentAttempting exercises | Dilute H2SO4AmmeterConnecting wireGraphite | KLB BK 4 Pg 122Longhorn 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 ionsWrite half ionic equations for reactions at electrodes | Discussing factors affecting preferential discharge of ionsWriting a summary of electrolysis of aqueous solutions | BatteryCarbon electrodeConnecting wireBulbTest tube | KLB BK 4 Pg 122Longhorn Chem BK 4 Pg 168-172POC 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 electrolysisQ = IT | Calculating amounts of elements discharged in electrolytic processes | Worked example | KLB BK 4 Pg 123Longhorn Chem BK 4 Pg 175POC 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 electrolysisWrite electrode half ionic equation for the process | Describe uses of electrolysis | Charts on electro platingMercury cellDiaphragm | KLB BK 4 Pg 155-156Longhorn 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 165Longhorn Chem BK 4 Pg 187-189POC BK 4 Pg 212 |  |
| 10 | 1 | MetalsOccurrence 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 168-169Longhorn Chem BK 4 Pg 195-197, 201, 204, 206POC 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 sodiumDescribe and explain the extraction of sodium by Down’s Cell using electrolysis processName 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 169-173Longhorn Chem BK 4 Pg 195-196POC 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 197-198Longhorn Chem BK 4 Pg 218-225POC 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 NaExplain the environmental pollution brought about by Na metal and its by-products | Research and representation done by groupsSummary notes taking | Flow charts | KLB BK 4 Pg 186-190Longhorn Chem BK 4 Pg 218-225POC 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 AlState the chief ore (bauxite) | Group discussionPresentation of resultsSummary notes taking | Flow chart | KLB BK 4 Pg 171Longhorn Chem BK 4 Pg 197-201POC 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 182-183Longhorn Chem BK 4 Pg 215POC 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 alloysRelate uses of alloys to properties | Flow chart | KLB BK 4 Pg 186-190Longhorn Chem BK 4 Pg 215-225POC BK 4 Pg 234 |  |
|  | 5 | IronExtraction | **By the end of the lesson the learner should be able to:-**Describe the suitable method of extracting IronName the chief ore of iron | Group discussions and presentations | Charts showing blast furnace | KLB BK 4 Pg 169Longhorn 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 215Longhorn Chem BK 4 Pg 182-183POC 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 alloysWriting respective chemical equationsRelate uses of alloys to properties | Teacher made flow chart | KLB BK 4 Pg 186-190Longhorn Chem BK 4 Pg 218-228POC 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 197Longhorn Chem BK 4 Pg 226-227POC BK 4 Pg 240 |  |
|  | 5 | ZincExtraction | **By the end of the lesson the learner should be able to:-**Describe the concentration of the ore by froth floatationDescribe 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 177-178Longhorn Chem BK 4 Pg 204POC 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 zincState and explain various uses of zinc | Writing the physical properties of zinc; M.P, B.P, density, thermal conductivityList major uses of zinc and its alloys | Flow chart | KLB BK 4 Pg 186Longhorn Chem BK 4 Pg 218POC 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 197Longhorn Chem BK 4 Pg 226POC BK 4  |  |
|  | 4 | CopperExtraction | **By the end of the lesson the learner should be able to:-**Describe and explain the concentration of the ore by froth floatationDescribe the reduction of the ore | Discuss froth floatationWrite chemical equations for reactions in the reduction | Flow chart | KLB BK 4 Pg 181-182Longhorn Chem BK 4 Pg 226POC 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 copperState and explain various uses of copper | Writing uses of copper, physical and chemical properties | Making notes | KLB BK 4 Pg 186Longhorn Chem BK 4 Pg 218POC BK 4 Pg 247 |  |
| 14-15 | 1-5 | KCSE Format: Emphasize on acids, bases and salts.Energy changes in physical and chemical processesRates of reaction and electrochemistry | **By the end of the lesson the learner should be able to:-**Writing 3 exam papersPaper 1 (theory)Paper 2 (theory)Paper 3 (practical) | KCSE sample papersTop Mark Rev. ChemGateway 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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| **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 | MetalsCopperPollution effects of copperExtraction 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, noisesDescribe techniques on reducing pollution effects | Group presentation | KLB BK 4 Pg 197-198Longhorn Chem BK 4 Pg 226-POC BK 4 Pg 249 |  |
|  | 2 | Summary NotesAssessment 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 booksTop MarkGateway ChemPrinciples of Chem |  |
|  | 3&4 | RadioactivityStability 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 discussionMaking notes | KLB BK 4 Pg Longhorn Chem BK 4 Pg 283POC 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 radioactivityName the particles emitted during radioactive decay and state their properties | Class discussion on the types of radiationsEmphasize on the change in mass and symbols of each types of radiation | Charts | KLB BK 4 Pg 210-212Longhorn Chem BK 4 Pg 285-288POC 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 graphsExplain the exponential nature of the curve and determine half-life from curve | Graph papers | KLB BK 4 Pg 288-291Longhorn Chem BK 4 Pg 289POC 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 213Longhorn 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 243-245Longhorn Chem BK 4 Pg 296POC 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-isotopesState dangers associated with radioactivity | Class discussionGroup discussion | Manilla paperFelt pens | KLB BK 4 Pg 243Longhorn Chem BK 4 Pg 300POC 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 workRevision questions | KCSE past papersRevision questions | KLB BK 4 Pg 243Longhorn Chem BK 4 Pg 301POC BK 4 Pg 340-342 |  |
|  | 2 | RevisionIdentification 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 revisionOrganic chemistryElectro chemistryRates of reactionEnergy changes | KCSE revision past papersRevision materials | KLB BK 4 Longhorn Chem BK 4 POC BK 4  |  |
|  | 3-5 | RevisionOrganic 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 227Longhorn Chem BK 4 Pg 249-253  |  |
| 5 | 1-5 | RevisionOrganic 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 227Longhorn Chem BK 4 Pg 249-253  |  |
| 6-7 | 1-5 | RevisionElectrochemistry  | **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 papersPast 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 papersPast papers (District Mock papers) |  |
| 10-11 | 1-5 | RevisionEnergy Changes | **By the end of the lesson the learner should be able to:-**Identify problems in the topicGive possible solutions to the problems | Drawing energy level diagramsPracticals | Revision papers | KCSE past papersPast papers (District Mock papers) |  |
| 12 | 1-5 | RevisionPracticals | **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 papersChemistry manual |  |
| 13-14 |  | **EXAMINATIONS** |  |

**CHEMISTRY SCHEMES OF WORK**

**FORM FOUR 2016**

**TERM III**

**REFERENCES:**

1. Secondary Chemistry students book 4 By KLB
2. Longhorn Secondary Chemistry Form 4 By Longhorn Publishers
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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 PapersRevision 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 discussionGroup discussionPracticals  | KLB BK 2Longhorn Chem BK 2Principles 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 discussionGroup discussionPracticals  | KLB BK 3Longhorn Chem BK 3 | KCSE Past PapersRevision 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 discussionGroup discussionPracticals  | Past PapersRevision Books | KCSE Past PapersRevision Books  |  |
|  |  | **KCSE EXAMINATIONS** |  |