**BIOLOGY SCHEMES OF WORK**

**FORM TWO 2016**

**TERM I**

**REFERENCES:**

1. KLB Secondary Biology Form 1 Students Book KLB BK 1
2. KLB Secondary Biology Form 2 Students Book KLB BK 2
3. Oxford Biology Book Form 1. Oxford BK 1
4. Oxford Biology Book Form 2. Oxford BK 2

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
|  |  | **SCHOOL OPENING** |  |
| 1 | 1 | Nutrition in AnimalsIntroductionHeterotropism | **By the end of the lesson, the learner** **should be able to:-**Distinguish symbiosis and parasitism | Class discussion | ChartsTextbooks | KLB BK 1 Pg 72Oxford BK 1 Pg 73 |  |
|  | 2,3&4 | Herbivorous animalsDentition | **By the end of the lesson, the learner** **should be able to:-**Construct dental formular in herbivores  | Drawing Class discussionPresentation | Pictures of herbivoreSkull, teeth. Real skulland jaws | KLB BK 1 Pg 74Oxford BK 1 Pg 74 |  |
|  | 5 | Omnivorous animals | **By the end of the lesson, the learner** **should be able to:-**Describe modification of four types ofteeth in human. | DrawingLabelingDescribing modification of teeth | Diagrams of humanskull. Diagram of teeth in Upper and lower jaw | KLB BK 1 Pg 74-76Oxford BK 1 Pg 75 |  |
| 2 | 1&2 | CarnivoresStructure of teeth | **By the end of the lesson, the learner** **should be able to:-**Construct dental formular in carnivores | Drawing, LabelingDescribe mode of feedingin herbivores | Diagrams of carnivoreskull.  | KLB BK 1 Pg 74-75Oxford BK 1 Pg 77 |  |
|  | 3,4&5 | Dental diseases.Digestion in the mouthOutline digestivefunctions of teeth, saliva, tongue | **By the end of the lesson, the learner** **should be able to:-**Outline the digestive functions ofsaliva, teeth and the tongue | Drawing LabelingClass discussionPresentation | Chart on digestive system Textbooks | KLB BK 1 Pg 77-80Oxford BK 1 Pg 78 |  |
| 3 | 1,2,34&5 | Digestion in the Stomach, Duodenum and Ileum | **By the end of the lesson, the learner** **should be able to:-**Describe digestion in the stomach andDuodenum | Taking notesAnswering questionsClass discussion | ChartsText books | KLB BK 1 Pg 80-83Oxford BK 1 Pg 79 |  |
| 4 | 1 | Absorption of digestedFood.Egestion | **By the end of the lesson, the learner** **should be able to:-**State how ileum is adapted to absorption function | Note takingDrawing and labeling | Text book | KLB BK 1 Pg 83Oxford BK 1 Pg 83 |  |
|  | 2&3 | Assimilation of absorbed food | **By the end of the lesson, the learner** **should be able to:-**Outline nutritional role of water, vitamins and roughage in humans | Describe role of vitamins and water in class discussion | Text book | KLB BK 1 Pg 84Oxford BK 1 Pg 84 |  |
|  | 4&5 | Factors that determineenergy requirementsin humans | **By the end of the lesson, the learner** **should be able to:-**Explain each of the factors determining energy requirements in humans | Compare surface area to volume ratio of adultwith infants | Pictures of people doing different activities,adult, offspring | KLB BK 1 Pg 88-89Oxford BK 1 Pg 87 |  |
| 5 | 1,2&3 | Transport in plantsIntroductionInternal structure ofthe root | **By the end of the lesson, the learner** **should be able to:-**Relate the structure of the root to itsFunction | Sectioning, observation,Mounting magnificationDrawing and labeling  | Uprooted dicot, Monocot plants, scapel,Water, slide and Microscope | KLB BK 2 Pg 1-4Oxford BK 2 Pg 1-4 |  |
| 6 | 1 | Structure of stem | **By the end of the lesson, the learner** **should be able to:-**State difference between dicot and Monocot | *© Education Plus Agencies*Staining, sectioning,Observation, drawing and labeling  | Scapel, grass stem,hand lens, white tileand methylene | KLB BK 2 Pg 5Oxford BK 2 Pg 6-7 |  |
|  | 2&3 | Absorption of waterand mineral saltsfunctions of xylem | **By the end of the lesson, the learner** **should be able to:-**Describe physiological processes involved in absorption of water and mineral salts | Experimental designobservation | Water in a beakerEosin dyeUproot herb | KLB BK 2 Pg 7Oxford BK 2 Pg 4-6 |  |
|  | 4&5 | Forces for water Movement alongxylem  | **By the end of the lesson, the learner** **should be able to:-**Outline factors for movement of wateralong xylem | Demonstration ofCapillarityObservation | Capillary tubesBeaker of water | KLB BK 2 Pg 11-12Oxford BK 2 Pg 11-12 |  |
| 7 | 1-5 | TranspirationFactorsSignificance | **By the end of the lesson, the learner** **should be able to:-**Demonstrate a simple experiment intranspiration | Experimental design toshow transpiration | Polythene paperPotted plantThread  | KLB BK 2 Pg 9-10Oxford BK 2 Pg 9-11 |  |
| 8 | 1&2 | Food transport in Phloem | **By the end of the lesson, the learner** **should be able to:-**Describe structure of phloem | Taking notes | Text book | KLB BK 2 Pg 17-18Oxford BK 2 Pg 12-13 |  |
|  | 3 | Open and closedCirculatory system inInsects | **By the end of the lesson, the learner** **should be able to:-**Distinguish between open and closedCirculatory system  | Observation | Diagram of body ofInsects | KLB BK 2 Pg 18-19Oxford BK 2 Pg 22 |  |
|  | 4&5 | Mammalian circulationStructure of the Mammalian heart | **By the end of the lesson, the learner** **should be able to:-**Describe structure and function of theheart | DrawingLabeling | Goat heartChart | KLB BK 2 Pg 19-22Oxford BK 2 Pg 24-26 |  |
| 9 | 1&2 | Heart beat | **By the end of the lesson, the learner** **should be able to:-**Relate the structure of the heart to its function | DrawingLabeling | Diagrams | KLB BK 2 Pg 23Oxford BK 2 Pg 27-28 |  |
|  | 3,4&5 | Structure and functionof arteries, veins andcapillaries  | **By the end of the lesson, the learner** **should be able to:-**Distinguish between artery and veins | Discussion | DiagramsCharts | KLB BK 2 Pg 25-30Oxford BK 2 Pg 29-32 |  |
| 10 | 1 | Diseases of the Circulatory system | **By the end of the lesson, the learner** **should be able to:-**List and describe diseases of the circulatory system | Discussion on the Circulatory system | Text books | KLB BK 2 Pg 31-32Oxford BK 2 Pg 32-33 |  |
|  | 2-5 | Structure and composition of blood | **By the end of the lesson, the learner** **should be able to:-**Describe modification of red bloodcells, WBC & Platelets to their functions | Notes takingClass discussion | Text books | KLB BK 2 Pg 32-36Oxford BK 2 Pg 33-37 |  |
| 11 | 1&2 | Blood groups andBlood transfusion | **By the end of the lesson, the learner** **should be able to:-**Name blood groups in humans, howEach is suited to its function | Discussion on bloodgroups Q/A method | Syringe | KLB BK 2 Pg 37-38Oxford BK 2 Pg 37-38 |  |
|  | 3&4 | Immunity | **By the end of the lesson, the learner** **should be able to:-**Distinguish between natural and Artificial immunity/acquired | DiscussionQ/A method | Text books | KLB BK 2 Pg 40-43Oxford BK 2 Pg 39-41 |  |
| 12 | 1 | Allergic reactions | **By the end of the lesson, the learner** **should be able to:-**Lists factors that lead to allergic Reactions in humans | Note takingDiscussion | Textbooks | KLB BK 2 Pg 43Oxford BK 2 Pg 41 |  |
|  | 3,4&5 | Gaseous ExchangeGaseous exchange inPlants stomata | **By the end of the lesson, the learner** **should be able to:-**Describe how gaseous exchange occur in plants | Demonstrate that gaseous exchange occurin leaves | Leaves of Lantanacamata, warm water ina beaker, source offlame | KLB BK 2 Pg 48-52Oxford BK 2 Pg 48-54 |  |
| 13 | 1-3 | Sites of gaseous exchange in microbes | **By the end of the lesson, the learner** **should be able to:-**Describe features of sites of gaseousexchange | Note taking | Diagrams of amoeba,Epidermis | KLB BK 2 Pg 53Oxford BK 2 Pg 57 |  |
|  | 4&5 | Gaseous exchange in Insects | **By the end of the lesson, the learner** **should be able to:-**Outline features of tracheal system inInsects | Class discussion | Diagrams if insects | KLB BK 2 Pg 54-55Oxford BK 2 Pg 58-59 |  |
| 14 | 1-5 | **END TERM EXAMS** |  |
| 15 | 1-5 | **REVISION OF END TERM EXAMINATIONS** |  |

**BIOLOGY SCHEMES OF WORK**

**FORM TWO 2016**

**TERM II**

**REFERENCES:**

1. KLB Secondary Biology Form 1 Students Book KLB BK 1
2. KLB Secondary Biology Form 2 Students Book KLB BK 2
3. Oxford Biology Book Form 1. Oxford BK 1
4. Oxford Biology Book Form 2. Oxford BK 2

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|  |  | **SCHOOL OPENING** |  |
| 1 | 1-5 | Gaseous exchange inFish | **By the end of the lesson, the learner** **should be able to:-**Describe structure and adaptations ofgills to their functions | Drawing & LabelingDissectingDiscussion & Presentation | Fish sample,Hand lens,Scapel, chart,textbooks | KLB BK 2 Pg 56-58Oxford BK 2 Pg 57 |  |
| 2 | 1&2 | Gaseous exchange inAmphibians.MouthLungs | **By the end of the lesson, the learner** **should be able to:-**Describe how gaseous exchange occurthrough skin and lungs | Class discussion | Text books | KLB BK 2 Pg 58Oxford BK 2 Pg 59 |  |
|  | 3 | Skin | **By the end of the lesson, the learner** **should be able to:-**Outline significance of moisture in skinGaseous exchange | Class discussionViewing audio visual | Diagram in text book,Audio visual aid | KLB BK 2 Pg 59Oxford BK 2 Pg 59 |  |
|  | 4&5 | Gaseous exchange inMammals, the air passage, nosal lining, larynx, trachea, lungs | **By the end of the lesson, the learner** **should be able to:-**Explain significance of moisture and Hairs along air passage | Class discussion | ChartTextbooks | KLB BK 2 Pg 50-61Oxford BK 2 Pg 63 |  |
| 3 | 1-5 | The breathing process | **By the end of the lesson, the learner** **should be able to:-**Outline role of intercostals muscles,diaphragm, ribcage in the breathingprocess | Demonstrating breathingusing model | Breathing modelChartTextbooksDiagram of ribcage | KLB BK 2 Pg 61-63Oxford BK 2 Pg 64-65 |  |
| 4 | 1,2&3 | Gaseous exchange in the alveolus | **By the end of the lesson, the learner** **should be able to:-**Outline role of moisture in the alveolus | Class discussion | DiagramTextbooks | KLB BK 2 Pg 64Oxford BK 2 Pg 66 |  |
|  | 4&5 | Factors affecting rateof breathing | **By the end of the lesson, the learner** **should be able to:-**Describe factors affecting rate ofBreathing in humans  | Class discussionPresentationNotes taking | Textbooks | KLB BK 2 Pg 65Oxford BK 2 Pg 66 |  |
| 5 | 1,2&3 | Diseases of the Respiratory system | **By the end of the lesson, the learner** **should be able to:-**Describe causes, symptoms and Prevention of diseases of the breathingsystem | Class discussion | Textbooks | KLB BK 2 Pg 67-70Oxford BK 2 Pg 74-75 |  |
|  | 4&5 | RespirationIntroductionTypes of respiration | **By the end of the lesson, the learner** **should be able to:-**Define respiration, name and describeAerobic and anaerobic respiration | Class discussion | ChartTextbooks | KLB BK 2 Pg 68Oxford BK 2 Pg 76 |  |
| 6 | 1&2 | Respiration significance | Explain significance of respiration andOutline further types of respiration | Demonstrate combustionof food yieldcarbon (IV) oxide | Food sample, boilingtube, capillary tube,lime water | KLB BK 2 Pg 73Oxford BK 2 Pg 76 |  |
|  | 3,4&5 | Application of Anaerobic respiration | **By the end of the lesson, the learner** **should be able to:-**Explain economic importance ofanaerobic respiration | Demonstrate fermentation | Yeast oil, glucose, Test tube, capillary tube, lime water | KLB BK 2 Pg 78Oxford BK 2 Pg 77 |  |
| 7 | 1,23&4 | Respiratory substratesRespiratory quotient | **By the end of the lesson, the learner** **should be able to:-**- List the metabolic substrates- Define respiratory quotient and calculate RQ | Class discussion | Glucose | KLB BK 2 Pg 79-80Oxford BK 2 Pg 77 |  |
|  | 5 | Factors affectingRespiration | **By the end of the lesson, the learner** **should be able to:-**Outline factors affecting respiration | Class discussion | Textbooks | KLB BK 2 Pg 80-81Oxford BK 2 Pg 78 |  |
| 8 | 1&2 | Factors affectingrespiratory substrate | **By the end of the lesson, the learner** **should be able to:-**Outline factors affecting respiration | Class discussion | Textbooks | KLB BK 2 Pg 81Oxford BK 2 Pg 79 |  |
|  | 3,4&5 | Excretion and HomeostasisIntroductionExcretion in plants | **By the end of the lesson, the learner** **should be able to:-**Explain difference between egestion and excretion | Demonstrate transpirationfrom potted plant | Potted plantPolythene paperThread | KLB BK 2 Pg 83Oxford BK 2 Pg 86 |  |
| 9 | 1 | Revision Respiration in plantsand animals | **By the end of the lesson, the learner** **should be able to:-**Make corrections on areas/questionsnot well done | Class discussion | Question papers | Past question papers |  |
| 10 | 1-5 |  | **By the end of the lesson, the learner** **should be able to:-**Outline physiological processes forelimination of wastes in amoeba | Notes taking | Textbooks | KLB BK 2 Pg 84-85Oxford BK 2 Pg 88 |  |
| 11 | 1&2 | Mammalian skinIntroduction | **By the end of the lesson, the learner** **should be able to:-**- State parts of the body covered by the skin | Note takingObservation of specimen | Preserved specimen i.e.Snake, rats. | KLB BK 2 Pg 84Oxford BK 2 Pg 88 |  |
|  | 3-5 | Structure of mammalianskin | **By the end of the lesson, the learner** **should be able to:-**- Describe structure and function of  skin | Drawing and labeling | ChartsMicro-viewerMicrofilm | KLB BK 2 Pg 85-86Oxford BK 2 Pg 89 |  |
| 12 | 1-5 | Functions of parts of the mammalian skin | **By the end of the lesson, the learner** **should be able to:-**Outline adaptations of the skin to itsfunctions | Observing charts of theskin structureClass discussion | Charts | KLB BK 2 Pg 86-87Oxford BK 2 Pg 90 |  |
| 13 | 1-5 | Excretion process bythe skin | **By the end of the lesson, the learner** **should be able to:-**List excretory parts of the skin | Class discussion | ChartsTextbooks |  |  |
| 14 | 1-5 | **END OF TERM EXAMINATIONS**  |  |

**BIOLOGY SCHEMES OF WORK**

**FORM TWO 2016**

**TERM III**

**REFERENCES:**

1. KLB Secondary Biology Form 1 Students Book KLB BK 1
2. KLB Secondary Biology Form 2 Students Book KLB BK 2
3. Oxford Biology Book Form 1. Oxford BK 1
4. Oxford Biology Book Form 2. Oxford BK 2

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
|  |  | **SCHOOL OPENING** |  |
| 1 | 1&2 | Revision of end of Term II exams | **By the end of the lesson, the learner** **should be able to:-**Make corrections on questions not wellanswered | Answering questions | Question papers |  |  |
|  | 3,4&5 | Excretion and Homeostasis.Structure and role oflungs in excretion | **By the end of the lesson, the learner** **should be able to:-**Outline structure of lungs and relate itto excretion | Class discussionNote taking | Chart Model | KLB BK 2 Pg 87-88Oxford BK 2 Pg 88 |  |
| 2 | 1,2&3 | Structure and function of mammalian kidney | **By the end of the lesson, the learner** **should be able to:-**Describe two regions of the kidney | Drawing and labelingNotes takingClass discussion | TextbooksCharts | KLB BK 2 Pg 88-89Oxford BK 2 Pg 90 |  |
|  | 4&5 | Structure of nephron | **By the end of the lesson, the learner** **should be able to:-**Draw, label and state functions of theNephron | DrawingLabeling | TextbooksCharts | KLB BK 2 Pg 90-91Oxford BK 2 Pg 92 |  |
| 3 | 1&2 | **CAT I** |  |
|  | 3,4&5 | Ultra filtration inNephron  | **By the end of the lesson, the learner** **should be able to:-**Outline ultra filtration | Notes taking | Textbooks | KLB BK 2 Pg 92Oxford BK 2 Pg 93 |  |
| 4 | 1,2&3 | Re-absorption andUrine Formation | **By the end of the lesson, the learner** **should be able to:-**State physiological processes involved in re-absorption | Class discussionNotes taking | Textbooks | KLB BK 2 Pg 92Oxford BK 2 Pg 93 |  |
|  | 4&5 | RevisionMethods of excretionin plants | **By the end of the lesson, the learner** **should be able to:-**Outline methods of excretion in plants | Class discussion | Question papers | Past examinations |  |
| 5 | 1,2&3 | Kidney Diseases | **By the end of the lesson, the learner** **should be able to:-**Describe disorders of the kidney | Taking notes | Textbooks | KLB BK 2 Pg 93Oxford BK 2 Pg 94 |  |
|  | 4&5 | The liver | **By the end of the lesson, the learner** **should be able to:-**Outline homeostatic functions of theKidney | Notes taking | Textbooks | KLB BK 2 Pg 93-94Oxford BK 2 Pg 97 |  |
| 6 | 1&2 | **CAT II** |  |
|  | 3,4&5 | Functions of the Liver | **By the end of the lesson, the learner** **should be able to:-**Explain meaning of deamination andThermoregulation  | Class discussion | Textbooks | KLB BK 2 Pg 95-96Oxford BK 2 Pg 98 |  |
| 7 | 1,2&3 | Liver diseases | **By the end of the lesson, the learner** **should be able to:-**List liver diseases | Taking notes | Textbooks | KLB BK 2 Pg 96-97Oxford BK 2 Pg 103 |  |
|  | 4&5 | Negative and PositiveFeedback | **By the end of the lesson, the learner** **should be able to:-**State what negative and positive feedback is | Taking notes | Textbooks | KLB BK 2 Pg 98Oxford BK 2 Pg 99 |  |
| 8 | 1&2 | Role of Hypothalamusin thermoregulation | **By the end of the lesson, the learner** **should be able to:-**- State what thermoregulation is- State the role of hypothalamus in thermoregulation | Class discussion | Textbooks | KLB BK 2 Pg 100 |  |
|  | 3-5 | Skin and Thermoregulation and Behavioralactivities that keeptemperature constant | **By the end of the lesson, the learner** **should be able to:-**- Distinguish between ectotherm and Endotherms- State the role of sweat glands and  blood vessels in thermoregulation- Outline behavioral activities that Maintain body temperature  | Class discussion |  | KLB BK 2 Pg 100-101Oxford BK 2 Pg 97 |  |
| 9 | 1,2&3 | Osmoregulation | **By the end of the lesson, the learner** **should be able to:-**State organs that eliminate excess waterand mineral salts from the blood stream | Class discussion | Textbooks | KLB BK 2 Pg 100-101Oxford BK 2 Pg 97 |  |
|  | 4&5 | Regulation of bloodSugar | **By the end of the lesson, the learner** **should be able to:-**List symptoms of diabetes mellitus | Notes taking | Textbooks | KLB BK 2 Pg 100-103 |  |