**PHYSICS SCHEMES OF WORK**

**FORM THREE 2016**

**TERM I**

**REFERENCES:**

1. Secondary Physics KLB
2. Comprehensive Secondary Physics
3. Principles of Physics
4. Golden Tips
5. Teacher’s Book

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| **1** | **1-5** | **REPORTING AND REVISION OF LAST TERM’S EXAMS** | | | | | |  |
| 2 | 1-3 | Linear Motion | Introduction of linear motion | By the end of the lesson, the learner should be able to:  Define distance, displacement, speed, velocity and acceleration | Defining distance, speed, displacement, velocity and acceleration | Charts on motion  Trolleys  Inclined planes | Comprehensive secondary physics book 3 pages 1  Comprehensive secondary physics teachers book 3 pages 1-3  Secondary physics KLB students book 2 page 1-7  Physics made easier vol. 2 pages 1-2  Secondary physics (M.N Patel) pages 5-8 |  |
|  | 4-5 | Linear Motion | Determining velocity | By the end of the lesson, the learner should be able to:  Describe experiments to determine velocity | Describing experiments on velocity | Trolleys  Stop watches  Graph paper  Ticker timer | Comprehensive secondary physics book 3 pages 2-3  Comprehensive secondary physics teachers book 3 pages 1-3  Secondary physics KLB students book 3 page 4-6  Physics made easier vol. 2 pages 2  Secondary physics (M.N Patel) pages 9-14 |  |
| 3 | 1-2 | Linear Motion | Motion time graphs | By the end of the lesson, the learner should be able to  Plot and explain motion time graphs | Plotting and interpreting motion-time graphs | Appropriate charts on velocity time and distance graphs  Graph paper  Data showing different distance, velocity and time | Comprehensive secondary physics book 3 pages 5-9  Comprehensive secondary physics teachers book 3 pages 8-18  Secondary physics KLB students book 3 page 4-6  Physics made easier vol. 2 pages 3-5  Secondary physics (M.N Patel) pages 21-25 |  |
|  | 3-4 | Linear Motion | Measuring speed, velocity and acceleration | By the end of the lesson, the learner should be able to:  Describe experiments to measure speed, velocity and acceleration | Describing experiments to measure speed, velocity and acceleration  Solving problems | Trolleys  Tapes  Ticker timer  Graphs | Comprehensive secondary physics students book 3 pages 2-3  Comprehensive secondary physics teachers book 3 pages 1-3  Secondary physics KLB students book 3 page 18-26  Physics made easier vol. 2 pages 1-5  Secondary physics (M.N Patel) pages 9-14 |  |
|  | 5 | Linear Motion | Acceleration | By the end of the lesson, the learner should be able to:  Describe acceleration | Describing acceleration  Problem solving | Charts on acceleration  Graphs  Data on velocity and time | Comprehensive secondary physics students book 3 pages 2-3  Comprehensive secondary physics teachers book 3 pages 1-3  Secondary physics KLB students book 3 page 7-8  Physics made easier vol. 2 pages 1-5  Secondary physics (M.N Patel) pages 7-8 |  |
| 4 | 1-2 | Linear Motion | Measuring speed, velocity and acceleration | By the end of the lesson, the learner should be able to:  Describe experiments to determine and measure speed, velocity and acceleration | Describing experiments to determine and measure speed velocity & acceleration | Graphs  Ticker timer  Tapes  Graphs | Comprehensive secondary physics students book 3 pages 2-3  Comprehensive secondary physics teachers book 3 pages 1-3  Secondary physics KLB students book 3 page 18-25  Physics made easier vol. 2 pages 1-5  Secondary physics (M.N Patel) pages 9-14 |  |
|  | 3-4 | Linear Motion | Equations of motion | By the end of the lesson, the learner should be able to:  Derive and apply the equations of uniform acceleration | Stating the equations of motion  Deriving the equations of motion  Applying the equations of motion | Graphs  Worked examples on motion | Comprehensive secondary physics students book 3 pages 7-9  Comprehensive secondary physics teachers book 3 pages3-5  Secondary physics KLB students book 3 page 26-29  Physics made easier vol. 2 pages 6-7  Secondary physics (M.N Patel) pages 25-27 |  |
|  | 5 | Linear Motion | Revision | By the end of the lesson, the learner should be able to:  Solve problems involving uniform acceleration | Questions and answers  Exercises | Test paper  Marking scheme | Comprehensive secondary physics students book 3 pages 9-10  Comprehensive secondary physics teachers book 3 pages4-5  Secondary physics KLB students book 3 page 37-39  Physics made easier vol. 2 pages 12-14  Secondary physics (M.N Patel) pages 30-36 |  |
| 5 | 1-5 | Linear Motion | Acceleration due to gravity | By the end of the lesson, the learner should be able to;  Determine acceleration due to gravity by free-fall and simple pendulum | Determining acceleration by tree-fall and pendulum method | Pendulum bob  String  Stop watches  Ticker-timer | Comprehensive secondary physics students book 3 pages 3-5  Comprehensive secondary physics teachers book 3 pages1-3  Secondary physics KLB students book 3 page 29-36  Physics made easier vol. 2 pages 7-10  Secondary physics (M.N Patel) pages 15-21 |  |
| 6 | 1-2 | Refraction Of Light | The meaning of refraction | By the end of the lesson, the learner should be able to  Describe simple experiments to illustrate refraction of light | Experiments demonstrating refraction of light | Beakers  Water  Stick or glass rod  Basins  Coins  Glass blocks  Pin | Comprehensive secondary physics students book 3 pages 11-12  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 41-46  Physics made easier vol. 2 pages 15-16  Secondary physics (M.N Patel) pages 37-40 |  |
|  | 3-5 | Refraction Of Light | Laws of refraction | By the end of the lesson, the learner should be able to:  State the laws of refraction and define refractive index | Discovering Snell’s law of refraction through experiments  Defining refractive index  Stating the laws of refraction | Glass blocks  Pins  Soft board  Plain paper  Geometric set | Comprehensive secondary physics students book 3 pages 12-14  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 47-61  Physics made easier vol. 2 pages 16-18  Secondary physics (M.N Patel) pages 40-42 |  |
| 7 | 1-2 | Refraction Of Light | Refractive index | By the end of the lesson, the learner should be able to:  Determine the refractive index of a given substance | Experiments to determine the refractive index of rates and glass by real and apparent depth method | Water  Pins  Plain papers  Coins  Beakers | Comprehensive secondary physics students book 3 pages 14-15  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 61-68  Physics made easier vol. 2 pages 17-19  Secondary physics (M.N Patel) pages 42-45 |  |
|  | 3-5 | Refraction Of Light | Total material reflection and its effect  Critical angle | By the end of the lesson, the learner should be able to  Describe an experiment to explain the total internal reflection and its effects  Define critical angle | Experiments to explain the total internal reflection and its effects  Defining critical angle  Observations and discussions on critical angle  Total internal reflection | Glass blocks  Soft boards  Pins  Geometrical set  Source of light | Comprehensive secondary physics students book 3 pages 16-17  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 68-76  Physics made easier vol. 2 pages 19-20  Secondary physics (M.N Patel) pages 46-49 |  |
| 8 | 1-3 | Refraction Of Light | Application of a total internal reflection in a prism periscope, optical fibre | By the end of the lesson, the learner should be able to:  Explain the working of a prisms and optical fibres among other applications | Making a periscope  Discussion on working of an optical fibre | Charts on total internal reflection and applications | Comprehensive secondary physics students book 3 pages 18-19  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 76-79  Physics made easier vol. 2 pages 20-23  Secondary physics (M.N Patel) pages 49-52 |  |
|  | 4-5 | Refraction Of Light | Dispersion of white light and recombination of colors of the spectrum | By the end of the lesson, the learner should be able to:  Describe an experiment to illustrate the dispersion of light | Experiment on dispersion of light using glass prisms | Triangular glass prisms  Source of light  Screen | Comprehensive secondary physics students book 3 pages 19-20  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 79-89  Physics made easier vol. 2 pages 21-22  Secondary physics (M.N Patel) pages 45-46 |  |
| 9 | 1-5 | Refraction Of Light | Problems of refractive index and critical angle | By the end of the lesson, the learner should be able to:  Solve problems involving the refractive index and critical angle | Discussions and problem solving in critical angle using the formulae sin C=i/n and n=sin i/sin r | Review questions  Past exams  Examples in the topic | Comprehensive secondary physics book 3 pages 21-22  Comprehensive secondary physics teachers book 3 pages6-9  Secondary physics KLB students book 3 page 82-86  Physics made easier vol. 2 pages 24-25  Secondary physics (M.N Patel) pages 53-55 |  |
| 10 | 1-5 | Newton’s Law’s Of Motion | Newton’s Laws of motion | By the end of the lesson, the learner should be able to  State the Newton’s laws of motion  State and explain the significance of a Newton’s laws of motion  Describe simple experiments to illustrate inertion | Discussion on Newton’s laws  Experiments to illustrate  *© Education Plus Agencies*  Newton’s laws of motion | Inclined plane  Trolley  Marbles  Spring balances | Comprehensive secondary physics students book 3 pages 23-27  Comprehensive secondary physics teachers book 3 pages 13-17  Secondary physics KLB students book 3 page 87-102  Physics made easier vol. 2 pages 26-27  Secondary physics (M.N Patel) pages 56-65 |  |
| 11 | 1-3 | Newton’s Law Of Motion | Conservation of linear momentum  Elastic collision  Inelastic collision  Recoil velocity | By the end of the lesson, the leaner should be able to:  State the law of conservation of momentum  Define elastic and inelastic collisions  Determine recoil velocity | Discussions of the laws of conservation of linear momentum  Determining recoil velocity | Marbles  Trolleys  Meter rules  Stop watches  Plasticine | Comprehensive secondary physics students book 3 pages 28-30  Comprehensive secondary physics teachers book 3 pages 13-17  Secondary physics KLB students book 3 page 103-108  Physics made easier vol. 2 pages 28-30  Secondary physics (M.N Patel) pages 66-72 |  |
|  | 4-5 | Newton’s Law Of Motion | Friction | By the end of the lesson, the learner should be able to:  Define friction  State and explain types of frictions  Describe and experiment to illustrate friction and state the applications of friction  State laws of friction | Defining friction  Stating and explaining types of frictions  Describing an experiment to illustrate friction  Stating the applications of the frictions  Stating laws of friction | Block of wood  Spring balance  Pulley  Flat surface | Comprehensive secondary physics students book 3 pages 28-39  Comprehensive secondary physics teachers book 3 pages 13-17  Secondary physics KLB students book 3 page 109-115  Physics made easier vol. 2 pages 30-31  Secondary physics (M.N Patel) pages 73-76 |  |
| 12 | 1-5 | Newton’s Laws Of Motion | Viscosity | By the end of the lesson, the leaner should be able to:  Define viscosity  Explain the concept of terminal velocity | Distinguishing viscous from- non-viscous liquids  Defining viscous liquids  Defining and explaining terminal viscosity | Glycerin  Paraffin  Water  Ball bearings  Stat watches  Meter rule  Measuring cylinders | Comprehensive secondary physics students book 3 pages33  Comprehensive secondary physics teachers book 3 pages 13-17  Secondary physics KLB students book 3 page 115-119  Physics made easier vol. 2 pages 31-33  Secondary physics (M.N Patel) pages 76-78 |  |
| 13 | 1-5 | Newton’s Laws Of Motion | Revision | By the end of the lesson, the learner should be able to:  Solve problems on Newton’s law of motion and law of conservation of linear momentum | Discussions and problem solving | Quizzes  Assignment  Review questions | Comprehensive secondary physics students book 3 pages34-35  Comprehensive secondary physics teachers book 3 pages 17-18  Secondary physics KLB students book 3 page 119-120  Physics made easier vol. 2 pages 34-38  Secondary physics (M.N Patel) pages 78-82 |  |
| **14** |  | **END OF TERM EXAMS** | | | | | |  |
| **15** |  | **PREPARATION OF REPORTS AND CLOSING** | | | | | |  |

**PHYSICS SCHEMES OF WORK**

**FORM THREE 2016**

**TERM II**

**REFERENCES:**

1. Secondary Physics KLB
2. Comprehensive Secondary Physics
3. Principles of Physics
4. Golden Tips
5. Teacher’s Book

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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| **1** | **1-5** | **REPORTING AND REVISION OF LAST TERM’S EXAMS** | | | | | |  |
| 2 | 1-3 | Energy, Work, Power And Machines | Energy | By the end of the lesson, the learner should be able to  Define energy  Describe various forms of energy | Defining energy  Stating the forms of energy  Identifying and describing energy transformation | Chart on the forms of energy and transformation | Comprehensive secondary physics students book 3 pages34-35  Comprehensive secondary physics teachers book 3 pages 17-18  Secondary physics KLB students book 3 page 121,122-125  Physics made easier vol. 2 pages 39  Secondary physics (M.N Patel) pages 83-86 |  |
|  | 4-5 | Energy, Work, Power And Machines | Sources of energy  Renewable  Non-renewable | By the end of the lesson, the learner should be able to:  Describe renewable and non-renewable sources of energy | Discussion on the sources of energy  Descriptions of renewable and non-renewable sources of energy | Chart on the sources of energy | Comprehensive secondary physics students book 3 pages41  Comprehensive secondary physics teachers book 3 pages 19-21  Secondary physics KLB students book 3 page 121,122-125  Physics made easier vol. 2 pages 39  Secondary physics (M.N Patel) pages 83,85-86 |  |
| 3 | 1-3 | Energy, Work, Power And Machines | The law of conservation of energy | By the end of the lesson, the learner should be able to:  State the laws of conservation of energy  Explain the applications of the laws of conservations of energy | Discussion on the law of conservation of energy | Chart on the laws of conservation of energy | Comprehensive secondary physics students book 3 pages 41-42  Comprehensive secondary physics teachers book 3 pages 20-21  Secondary physics KLB students book 3 page 132-134  Physics made easier vol. 2 pages 39  Secondary physics (M.N Patel) pages 86-88 |  |
|  | 4-5 | Energy, Work, Power And Machines | Work | By the end of the lesson, the learner should be able to:  Define work  Explain the concept of work and energy | Experiment on work done by moving objects through a distance  Problem solving | Masses  Wooden block  Spring balance | Comprehensive secondary physics students book 3 pages 42-43  Comprehensive secondary physics teachers book 3 pages 18-22  Secondary physics KLB students book 3 page 125-132  Physics made easier vol. 2 pages 39-40  Secondary physics (M.N Patel) pages 88-90 |  |
|  | 1-2 | Energy, Work, Power And Machines | Kinetic energy  Potential energy  power | By the end of the lesson, the learner should be able to  define power  explain the meaning of power potential and kinetic energies  distinguish between kinetic energy and potential energy | Discussion and the meanings of kinetic energy and potential energy  Defining power  Distinguishing between kinetic energy and potential energy | Object that can be lifted  Spring balance | Comprehensive secondary physics students book 3 pages 43-45  Comprehensive secondary physics teachers book 3 pages 18-22  Secondary physics KLB students book 3 page 126-132,134-136  Physics made easier vol. 2 pages 40-41  Secondary physics (M.N Patel) pages 90-96 |  |
|  | 3-4 | Energy, Work, Power And Machines | Simple machines | By the end of the lesson, the bearer should be able to:  State the mechanical advantage  State the velocity ratio (V.R) of different machines | Discussions on the M.A and V.R of different machines  Experiments in illustrate M.A and V.R of machines  Problem solving | Levers  Pulleys  Inclined planes  Strings  Masses | Comprehensive secondary physics students book 3 pages 41-45  Comprehensive secondary physics teachers book 3 pages 18-22  Secondary physics KLB students book 3 page 126-132,134-136  Physics made easier vol. 2 pages 40-441  Secondary physics (M.N Patel) pages 96-97 |  |
|  | 5 | Energy, Work, Power And Machines | Simple machines | By the end of the lesson, the learner should be able to  State and describe the efficiency of various machines | Discussion on efficiency of different machines  Experiments to illustrate efficiency of various machines  Problem solving | Levers  Pulleys  Inclined planes  Strings  Masses | Comprehensive secondary physics students book 3 pages 45-51  Comprehensive secondary physics teachers book 3 pages 18-22  Secondary physics KLB students book 3 page 137-159  Physics made easier vol. 2 pages 44-50  Secondary physics (M.N Patel) pages 97-111 |  |
| 4 | 1-5 | Energy, Work, Power And Machines | Revision | By the end of the lesson, the learner should be able to  Solve problems involving work, energy, power and machines | Problems solving  Questions and answers  Discussion on the problems involving work, power, energy and machines | Quizzes  Exercises  Project work | Comprehensive secondary physics students book 3 pages 52-53  Comprehensive secondary physics teachers book 3 pages 23-24  Secondary physics KLB students book 3 page 159-161  Physics made easier vol. 2 pages 50-52  Secondary physics (M.N Patel) pages 111-115 |  |
| 5 | 1-2 | Current Electricity Ii | Electric current  Scale reading | By the end of the lesson, the learner should be able to:  Define potential  Differentiate and state its SI units  Measure potential difference and current in a circuit | Defining potential difference  Measuring P.d  Discussion on p.d and current  Experiments to illustrate p.d and current | Ammeter  Voltmeter  Battery  Connecting wires | Comprehensive secondary physics students book 3 pages 54-55  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 161-164  Physics made easier vol. 2 pages 53  Secondary physics (M.N Patel) pages 116-117 |  |
|  | 3-4 | Current Electricity | Ammeters and voltmeters | By the end of the lesson, the learner should be able to:  Measure potential difference and current in a circuit using the ammeters | Scale reading  Converting units of measurements  Discussing simple electric circuits | Ammeters  Voltmeters  Battery  Wires  Rheostat | Comprehensive secondary physics students book 3 pages 54-55  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 164-168  Physics made easier vol. 2 pages 53  Secondary physics (M.N Patel) pages 118-119 |  |
|  | 5 | Current Electricity Ii | Ohm’s Law | By the end of the lesson, the learner should be able to:  Derive and verify ohm’s law  State ohm’s law | Experiments verifying ohm’s law  Stating ohm’s law | Ammeter  Voltmeter  Rheostat  Wires  Dry cells | Comprehensive secondary physics students book 3 pages 55-57  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 168-171  Physics made easier vol. 2 pages 53-54  Secondary physics (M.N Patel) pages 120-124 |  |
| 6 | 1-2 | Current Electricity | Voltage-current relationships | By the end of the lesson, the learner should be able to:  Define resistance and state its SI unit  Determine experientially the voltage current  Relationship for resistance in series and parallel | Defining resistance  Experiments to determine the relationship between voltage-current | Resistance wire  Rheostat  Battery  Voltmeter  Ammeter  Connecting wires | Comprehensive secondary physics students book 3 pages 57-59  Comprehensive secondary physics teachers book 3 pages 26-28  Secondary physics KLB students book 3 page 171-177  Physics made easier vol. 2 pages 53-54  Secondary physics (M.N Patel) pages 122-124 |  |
|  | 3-5 | Current Electricity Ii | Measurement of resistance | By the end of the lesson, the learner should be able to:  Describe experiment to measure resistance using – voltmeter method  The Wheatstone bridge method  The meter bridge | Experiments to measure resistance of materials | Ammeters  Voltmeters  Rheostats  Connecting wires  Resistance wire  Dry cells  Switches  Meter bridge  Wheatstone bridge  Resisters with known resistance | Comprehensive secondary physics students book 3 pages 57-59  Comprehensive secondary physics teachers book 3 pages 26-28  Secondary physics KLB students book 3 page 177-180  Physics made easier vol. 2 pages 54-55  Secondary physics (M.N Patel) pages 122-124 |  |
| 7 | 1-3 | Current Electricity | Effective resistance for registers in series and parallel | By the end of the lesson, the learner should be able to:  Derive effective resistance | Discussions on deriving the effective resistance  Deriving effective resistance of registers in parallel and series | Cells  Resistors  Ammeters  Voltmeters  wires | Comprehensive secondary physics students book 3 pages 60-66  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 180-189  Physics made easier vol. 2 pages 56-57  Secondary physics (M.N Patel) pages 124-131 |  |
|  | 4-5 | Current Electricity | E.m.f and internal resistance (E=V+1r) | By the end of the lesson, the learner should be able to  Determine e.m.f  Explain the internal resistance of a cell | Explanation on internal resistance  Demonstration on e.m.f and internal resistance  Discussion on e.m.f | Voltmeters  Ammeter  Cells  Connecting wires | Comprehensive secondary physics students book 3 pages 62-63  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 190-195  Physics made easier vol. 2 pages 56-59  Secondary physics (M.N Patel) pages 124 |  |
| 8 | 1-5 | Current Electricity | Revision | By the end of the lesson, the learner should be able to:  Solve numerical problems involving the ohm’s law  Resistors in series and parallel | Problem solving  Questions and answers  Discussions on the questions asked  Experiments to solve questions of sound | Exercise in the students book 3  Marking scheme  Past paper containing questions on current electricity | Comprehensive secondary physics students book 3 pages 64-66  Comprehensive secondary physics teachers book 3 pages 24-28  Secondary physics KLB students book 3 page 195-197  Physics made easier vol. 2 pages 60-63  Secondary physics (M.N Patel) pages 131-133 |  |
| 9 | 1-2 | Waves II | Properties of waves | By the end of the lesson, the learner should be able to:  State and explain the properties of waves experimentally  Sketch wave fronts to illustrate the reflections | Stating and explaining the properties of waves  Sketching wave fronts illustrate reflection | Rope/wire  Various reflections | Comprehensive secondary physics students book 3 pages 67-69  Comprehensive secondary physics teachers book 3 pages 29-32  Secondary physics KLB students book 3 page 198-203  Physics made easier vol. 2 pages 64-65  Secondary physics (M.N Patel) pages 134-142 |  |
|  | 3-5 | Waves II | Diffraction, refraction and interference of waves | By the end of the lesson, the learner should be able to:  Sketch various wave fonts to illustrate their diffraction, refraction and interference | Sketching various wave fonts  Experiments to illustrate refraction, diffraction and interference | Water  Basin  Ripple  Tank | Comprehensive secondary physics students book 3 pages 70-73  Comprehensive secondary physics teachers book 3 pages 29-32  Secondary physics KLB students book 3 page 203-212  Physics made easier vol. 2 pages 65-66  Secondary physics (M.N Patel) pages 142-144 |  |
| 10 | 1-2 | Waves II | Constructive and distractive waves | By the end of the lesson, the learner should be able to:  Explain constructive and destructive interference | Discussion on constructive and destructive interference  Experiments constructive and destructive interference | Ripple tank  Rope/wire | Comprehensive secondary physics students book 3 pages 73-74  Comprehensive secondary physics teachers book 3 pages 29-32  Secondary physics KLB students book 3 page 203-212  Physics made easier vol. 2 pages 65-66  Secondary physics (M.N Patel) pages 144-147 |  |
|  | 3-5 | Waves II | Stationary waves | By the end of the lesson, the learner should be able to:  Describe experiments to illustrate stationary waves | Demonstration and explaining of stationery waves | Wires under tension | Comprehensive secondary physics students book 3 pages 74  Comprehensive secondary physics teachers book 3 pages 29-32  Secondary physics KLB students book 3 page 212-215  Physics made easier vol. 2 pages 66-67  Secondary physics (M.N Patel) pages 147-148 |  |
| 11 | 1-5 | Waves II | Vibrating air columns | By the end of the lesson, the learner should be able to:  Describe and explain closed pipe and open pipe | Describing vibrations in close and open pipes | Open and closed pipes | Comprehensive secondary physics students book 3 pages 74  Comprehensive secondary physics teachers book 3 pages 29-32  Secondary physics KLB students book 3 page 218-220  Physics made easier vol. 2 pages 67-73  Secondary physics (M.N Patel) pages 148-149 |  |
| **12** |  | **TOPICAL REVISION** | | | | | |  |
| **13** |  | **END OF TERM EXAMS** | | | | | |  |
| **14** |  | **PREPARATION OF REPORTS AND CLOSING** | | | | | |  |

**PHYSICS SCHEMES OF WORK**

**FORM THREE 2016**

**TERM III**

**REFERENCES:**

1. Secondary Physics KLB
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4. Golden Tips
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| **WK** | **LSN** | **TOPIC** | **SUB-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| **1** | **1-5** | **REPORTING AND REVISION OF LAST TERM’S EXAMS** | | | | | |  |
| 2 | 1-2 | Electrostatics Ii | Electric field patterns | By the end of the lesson, the learner should be able to  Sketch electric field patterns around charged bodies | Discussion on electric field patterns  Observing and plotting field patterns | Charts on magnetic fields | Comprehensive secondary physics students book 3 pages 76-77  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 222-225  Physics made easier vol. 2 pages 76-77  Secondary physics (M.N Patel) pages 151-152 |  |
|  | 3-5 | Electrostatics Ii | Charge distribution on conductors | By the end of the lesson, the learner should be able to  Describe charge distribution on conductors:  Spherical and pear shaped conductors | Discussions on charge distribution on conductors  Experiment is demonstrated/illustrate charge distribution on conductors | Vande Graaf generator  Chart showing charge distribution on different conductors  Gold leaf electroscope | Comprehensive secondary physics students book 3 pages 77-78  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 225-228  Physics made easier vol. 2 pages 77-78  Secondary physics (M.N Patel) pages 153-154 |  |
| 3 | 1-2 | Electrostatics Ii | Lighting arrestor | By the end of the lesson, the learner should be able to:  Explain how lightning arrestor works | Discussions on the lighting arrestor  Explanations on the lighting arrestor | Improvised lighting arrestor  Photographs of lightning arrestor | Comprehensive secondary physics students book 3 pages 79-80  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 229-230  Physics made easier vol. 2 pages 79  Secondary physics (M.N Patel) pages 155 |  |
|  | 3-5 | Electrostatics Ii | Capacitance | By the end of the lesson, the learner should be able to:  Define capacitance and state its SI units  Describe the charging and discharging of a capacitor  State and explain the factors that affect the capacitance of a parallel plate capacitor | Experiments on charging and discharging capacitor  Discussion on factors affecting capacitance  Defining capacitance | Complete circuits  capacitors | Comprehensive secondary physics students book 3 pages 80-82  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 230-237  Physics made easier vol. 2 pages 79-80  Secondary physics (M.N Patel) pages 155-158 |  |
| 4 | 1-2 | Electrostatics Ii | Combinations of capacitors | By the end of the lesson, the learner should be able to:  Derive the effective capacitance of capacitors in series and parallel | Deriving effective capacitance of capacitors in series and parallel  Solving problems  Discussion in the effective capacitance | Capacitors in series and parallel connections  Charts showing complete circuits | Comprehensive secondary physics students book 3 pages 80-82  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 237-241  Physics made easier vol. 2 pages 81-82  Secondary physics (M.N Patel) pages 155-158 |  |
|  | 3 | Electrostatics Ii | Energy stored in a charged capacitor | By the end of the lesson, the learner should be able to:  Describe the energy stored in a charged capacitor | Describing the energy stored in a charged capacitor | Capacitors  Dry cells  Charts on capacitors used | Comprehensive secondary physics students book 3 pages 82  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 244  Physics made easier vol. 2 pages 82  Secondary physics (M.N Patel) pages 159-160 |  |
|  | 4 | Electrostatics | Application of capacitors | By the end of the lesson, the learner should be able to  State and explain the applications of capacitors | Discussions on applications of capacitors  Stating and explaining applications of capacitors | Charts on the use of capacitors  capacitors | Comprehensive secondary physics students book 3 pages 82-84  Comprehensive secondary physics teachers book 3 pages 34-39  Secondary physics KLB students book 3 page 244  Physics made easier vol. 2 pages 82-83  Secondary physics (M.N Patel) pages 161 |  |
|  | 5 | Electrostatics Ii | Revision | By the end of the lesson, the learner should be able to solve numerical problems involving capacitors using the formulae  Q= CV  C1=C1+C1  1/C1= 1/C1+1/C2 | Problem solving | Questions in the students Book 3 | Comprehensive secondary physics students book 3 pages 84-87  Comprehensive secondary physics teachers book 3 pages 38-39  Secondary physics KLB students book 3 page 244-245  Physics made easier vol. 2 pages 85-88  Secondary physics (M.N Patel) pages 161 |  |
| 5 | 1-3 | The Heating Effect Of Electric Current | Electric current heating effect | By the end of the lesson, the learner should be able to:  Perform and describe experiments to illustrate the heating effect of electric current | Experiments to illustrate heating effect of electric current  Discussions on heating effect of electric current | Complete circuit  Water in a beaker  Metallic rod  Thermometer | Comprehensive secondary physics students book 3 pages 88  Comprehensive secondary physics teachers book 3 pages 39-41  Secondary physics KLB students book 3 page 246-247  Physics made easier vol. 2 pages 89  Secondary physics (M.N Patel) pages 162-165 |  |
|  | 4-5 | The Heating Effect Of An Electric Current | Factors affecting electric current | By the end of the lesson, the learner should be able to:  State and explain the factors affecting electrical energy | Discussions on the factors affecting electrical energy  Experiments on electrical energy  Stating and explaining factors affecting the electrical energy | Complete circuit  Wires  Rheostat  Ammeter  battery | Comprehensive secondary physics students book 3 pages 88-90  Comprehensive secondary physics teachers book 3 pages 39-41  Secondary physics KLB students book 3 page 247-255  Physics made easier vol. 2 pages 89-90  Secondary physics (M.N Patel) pages 165-166 |  |
| 6 | 1-2 | The Heating Effect Of Electric Current | Heating devices  fuses | By the end of the lesson, the learner should be able to:  describe the working of electric iron, bulb filament and an electric water | discussion on electric devices  observations and experiments on heating devices | electric irons  electric bulb  electric kettle  electric heater  fuses | Comprehensive secondary physics students book 3 pages 90-91  Comprehensive secondary physics teachers book 3 pages 39-41  Secondary physics KLB students book 3 page 255-258  Physics made easier vol. 2 pages 90-91  Secondary physics (M.N Patel) pages 166-170 |  |
|  | 3-5 | The Heating Effect Of Electric Current | Revision | By the end of the lesson, the learner should be able to  Solve problems involving electrical energy and electric power | Problem solving  Exercises assignment  Discussion on problems involving electrical energy and electrical power | Set questions  Marking scheme | Comprehensive secondary physics students book 3 pages 90-92  Comprehensive secondary physics teachers book 3 pages 41  Secondary physics KLB students book 3 page 246-258-259  Physics made easier vol. 2 pages 92  Secondary physics (M.N Patel) pages 171 |  |
| 7 | 1-2 | Quantity Of Heat | Heat capacity  Specific heat capacity  Units of heat capacity | By the end of the lesson the learner should be able to  Define heat capacity and specific heat capacity and derive their SI units | Experiments on heat capacity and specific heat capacity  Discussion on heat capacity and specific h eat capacity  Defining heat capacity and heat specific heat capacity | Source of heat  Water  Lagged can  Thermometer | Comprehensive secondary physics students book 3 pages 93-96  Comprehensive secondary physics teachers book 3 pages 42-46  Secondary physics KLB students book 3 page 246-260-271  Physics made easier vol. 2 pages 93-94  Secondary physics (M.N Patel) pages 172-174 |  |
|  | 3-4 | Quantity Of Heat | Change of state | By the end of the lesson the learner should be able to define and explain latent heat of fusion, specific latent heat of fusion  Define and explain latent heat of vaporization, specific latent heat of vaporization  State the SI units of latent heat of fusion and latent heat of vaporization | Experiments on latent heat of fusion and latent heat of vaporization  Discussion on latent heat of fusion and latent heat of vaporization | File  Water  Thermometer  Weighing balance  Source of heat | Comprehensive secondary physics students book 3 pages 96-97  Comprehensive secondary physics teachers book 3 pages 42-46  Secondary physics KLB students book 3 page 246-271-281  Physics made easier vol. 2 pages 95-96  Secondary physics (M.N Patel) pages 188-199 |  |
|  | 5 | Quantity Of Heat | Boiling and melting | By the end of the lesson, the learner should be able to:  Distinguish between boiling and melting  State the factors affecting melting points and boiling points of a substance  Describe the working of a pressure cooker and a refrigerator | Distinguishing between boiling and melting points  Stating factors affecting boiling and melting points  Experiments to illustrate boiling and melting point | Pressure cooker  Refrigerator  Charts on melting and boiling points  Ice  Heat  Sufuria  water | Comprehensive secondary physics students book 3 pages 97-101  Comprehensive secondary physics teachers book 3 pages 42-46  Secondary physics KLB students book 3 page 246-282-288  Physics made easier vol. 2 pages 96-98  Secondary physics (M.N Patel) pages 186-187 |  |
| 8 | 1-5 | Quantity Of Heat | Revision | By the end of the lesson, the learner should be able to:  Solve problems involving quantity of heat | Problem solving | Quizzes  Past exams  Exercises  Calculators  Mathematical tables | Comprehensive secondary physics students book 3 pages 101-102  Comprehensive secondary physics teachers book 3 pages 42-46  Secondary physics KLB students book 3 page 288-289  Physics made easier vol. 2 pages 100-104  Secondary physics (M.N Patel) pages 183-185, 200-202 |  |
| 9 | 1-2 | The Gas Laws | Pressure law | By the end of the lesson, the learner should be able to:  State and verify the gas laws for an ideal gas experimentally | Experiments to verify pressure law  Demonstrations on pressure law  Discussion on pressure law | Water  Thermometer  Measuring cylinder  Syringe  Narrow glass tube | Comprehensive secondary physics students book 3 pages 103-104  Comprehensive secondary physics teachers book 3 pages 47-50  Secondary physics KLB students book 3 page 299-302  Physics made easier vol. 2 pages 106  Secondary physics (M.N Patel) pages 203-207 |  |
|  | 3-4 | The Gas Laws | Charles’s law | By the end of the lesson, the learner should be able to:  State and verify Charles’s law experimentally | Experiments to verify Charles’s law  Discussion on Charles’s law | Water  Thermometer  Measuring cylinder  Syringe  Narrow glass tube | Comprehensive secondary physics students book 3 pages 105-106  Comprehensive secondary physics teachers book 3 pages 47-50  Secondary physics KLB students book 3 page 295-298  Physics made easier vol. 2 pages 107  Secondary physics (M.N Patel) pages 203 |  |
|  | 5 | The Gas Laws | Boyle’s law | By the end of the lesson, the learner should be able to:  State and verify Boyle’s law experimentally | Experiments verifying and explain Boyle’s law  Discussion on Boyle’s law | Water  Thermometer  Syringe  Measuring cylinder  Narrow glass tube | Comprehensive secondary physics students book 3 pages 106-107  Comprehensive secondary physics teachers book 3 pages 47-50  Secondary physics KLB students book 3 page 290-294  Physics made easier vol. 2 pages 107  Secondary physics (M.N Patel) pages 203 |  |
| 10 | 1-2 | The Gas Law’s | The kinetic theory of gases | By the end of the lesson, the learner should be able to:  Explain law absolute zero temperature may be obtained from pressure and temp. graphs | Discussions on the absolute zero temperature from pressure using kinetic theory of gases | Graph paper  Clinical thermometer  Working out sums | Comprehensive secondary physics students book 3 pages 108-110  Comprehensive secondary physics teachers book 3 pages 47-50  Secondary physics KLB students book 3 page 303  Physics made easier vol. 2 pages 107  Secondary physics (M.N Patel) pages 207-209 |  |
|  | 3-4 | The Gas Laws | The kinetic theory of gases | By the end of the lesson, the learner should be able to  Explain the gas laws using the kinetic theory of gases | Discussion on gas laws using kinetic theory of gases  Working out sums | Graph papers  Clinical thermometers | Comprehensive secondary physics students book 3 pages 68-110  Comprehensive secondary physics teachers book 3 pages 49  Secondary physics KLB students book 3 page 303  Physics made easier vol. 2 pages 107  Secondary physics (M.N Patel) pages 209-210 |  |
|  | 5 | The Gas Laws | The kinetic theory of gases | By the end of the lesson, the learner should be able to:  Convert Celsius scales to Kelvin scale of temperature and state basic assumptions of kinetic theory of gases | Discussion on basic assumptions of kinetic theory of gases  Conversion of Celsius to Kelvin scales | Graph paper  Clinical thermometer | Comprehensive secondary physics students book 3 pages 110-111  Comprehensive secondary physics teachers book 3 pages 50-51  Secondary physics KLB students book 3 page 107  Physics made easier vol. 2 pages 107  Secondary physics (M.N Patel) pages 214 |  |
| 11 | 1-5 | The Gas Laws | Revision | By the end of the lesson, the learner should be able to:  Solve numerical problems involving gas laws | Solving problems involving gas laws  Discussion on the problems involving gas laws | Quizzes  Past examination  Exercise in the Book 3 | Comprehensive secondary physics students book 3 pages 110-111  Comprehensive secondary physics teachers book 3 pages 50-51  Secondary physics KLB students book 3 page 303-305  Physics made easier vol. 2 pages 109-110  Secondary physics (M.N Patel) pages 215-217 |  |
| **12** |  | **END OF YEAR EXAMS** | | | | | |  |