PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT, .

**. SCHEME OF WORK OF PHYSICS FORM FOUR YEAR OF 2024**

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| Competen  ce | Specific  Objectives | Month | Week | Main Topic | Sub Topic | Perio  ds | Teaching Activities | Learning Activities | Learning Aids | Assessment | References | Remarks |
| The student should have ability to: identify types of  waves in nature | The student should be able to:   1. explain the concept of a wave; 2. explain the terms wave long frequency and velocity of a wave; and 3. identify types   of waves. | Januar y | Week 2 | WAVES | Introductio n to waves | 4 | 1. To guide students to brainstorm the concept of waves 2. To lead students to demonstrate 3. Through questions and answer technique assist students to explain the terms wavelength ( / ), frequency (l) and velocity (v) of a wave. 4. To guide students to identify types of waves. | 1. Students groups to discuss e concept of waves. 2. Students to explain the waveleng frequency and velocity of a wave. 3. Students in groups to identify mechanical and electro magnetic waves | o Slinky spring \* Rope, ripple \* Vibrator \* Ting fork c Chart showing graph of displacement against time  \*cathode rays oscilloscope | Is the stud able to explain e concept of a wave?  Can the student explain the terms wavelength frequency and  velocity of a wave?  Can student identify types of  wave? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: apply waves in daily life | The student should be able to:   1. explain the term refraction, reflection, diffraction and interference of a wave 2. mention the applications of refraction, reflection, diffraction and interference of a wave in daily life 3. demonstrate the behaviour of   waves | Januar y | Week 3-4 | WAVES | behaviour of waves | 8 | i) guide the students to explain the behaviour of gases such as refraction, reflection, diffraction, and interference of a wave | i) students to explain refraction, reflection, diffraction, and interference of a wave | ripple tank,rectangular prism,two metal rods, vibrator, two speakers and a radio,TV, mobile phone | is the student able to explain  refraction, reflection, diffraction, and interference of a wave? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: apply waves in daily life | The student should be able to:   1. explain the term refraction, reflection, diffraction and interference of a wave 2. mention the applications of refraction, reflection, diffraction and interference of a wave in daily life 3. demonstrate the behaviour of   waves | Febru ary | Week 1 | WAVES | behaviour of waves | 4 | 1. lead the students to brainstorm on the applications of refraction, reflection, diffraction, and interference of a wave 2. assist the students to demonstrate the behaviour of gases | 1. students mention the applications of refraction, reflection, diffraction, and interference of a wave 2. students in groups to demonstrate refraction, reflection, diffraction, and interference of a wave | ripple tank,rectangular prism,two metal rods, vibrator, two speakers and a radio,TV, mobile phone | can the student mention the  applications of refraction, reflection, diffraction, and interference of a wave?  can the student asses the  bahaviour of a wave? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| The student should have ability to: describe the propagatio n of a wave | The student should be able to: a ) Describe the propagation of mechanical waves.  b) explain the propagation of electomagnetic waves | Febru ary | Week 2 | WAVES | propagation of waves | 4 | 1. To use question and answer technique to assist students to discuss propagation of mechanical waves. | 1. Students groups to descrbe the propagation of mechanical waves 2. students to determine the relationship between frequency, speed and wavelength | c SIy spring \* Tling fork \* Ripple \*Rope  Chart showing electromagnetic spectrum chart showing the relationship between frequency, speed | Is e student able to describe propagation of mechanical waves?  Is the student able to explain the propagation of electromagnetic waves? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  | c) determine the relation between frequency, speed and wavelength of a wave and determine the refractive index  of a medium |  |  |  |  |  |  |  | and wavelength. | Is the student able to determine the relation between frequency, speed and wavelength of a wave? |  |  |
| The student should have ability to: describe the propagatio n of a wave | The student should be able to: a ) Describe the propagation of mechanical waves.   1. explain the propagation of electomagnetic waves 2. determine the relation between frequency, speed and wavelength of a wave and determine the refractive index   of a medium | Febru ary | Week 3 | WAVES | propagation of waves | 4 | 1. To guide s en to demonstrate the propagation of mechanical waves. 2. To apply question and answer technique to explain the propagation of electromagnec waves. 3. Students groups to discuss the propagation of electromagnec waves. 4. Through question and answer technique to lead | 1. Students to describe frequency from the equation students to determine the refractive index of a medium. 2. Students groups to demonstrate the propagation of waves | c SIy spring \* Tling fork \* Ripple \*Rope  Chart showing electromagnetic spectrum chart showing the relationship between frequency, speed and wavelength. | Is the student able to explain the propagation of electromagnetic waves?  Is the student able to determine the relation between frequency, speed and wavelength of a wave? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| The student should have ability to: explain the mechanis m of  hearing | the student should be able to:   1. identify the sources of sound waves 2. explain the concept of   audability of sound | Febru ary | Week 4 | WAVES | sound waves | 4 | 1. guide the students to identify sources of sound waves 2. help the students to explain the concept of hearing 3. assist the students to describe the perception of hearing | 1. students to identify sources of sound waves 2. students to explain the concept of audability range | drum, guitar, model of human hear,table with audability range, tall wall , hall, microphone | is the student able to:   1. identify sources of sound waves | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: explain the mechanis m of  hearing | 1. describe the perception of hearing 2. explain the concept of echo and reverbaration of sound | March | Week 1 | WAVES | sound waves | 4 | iv) guide the students to demonstrate the production of echo | iii) students to describe the perception of hearing iv) explain the concept of echo and reverbaration | drum, guitar, model of human hear,table with audability range, tall wall , hall, microphone | 1. explain the concept of audability range 2. describe the perception of hearing 3. explain the concept of echo and reverbaration 4. determine the speed of sound in   air. | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| The student should have ability to: Construct simple musical instrument | The student should be able to:  a) explain concept of a musical sound; | March | Week 2 | WAVES | musical sounds | 4 | 1. To guide students to explain the concept of musical sound 2. To lead students to the identify factors affecting loudness pitch and quality of musical sound. 3. organize students visit for students to identify different types of musical instruments 4. lead the students to explain the terms nodes, antinodes, and stationery waves 5. guide the student to determine the factors that affect the frequency of a note 6. To lead students to dlstinguish between fundamental note and overtones. | 1. Students to give meaning of music and noise 2. Student to identify factors affecting loudness, pitch and frequency of musical sound 3. students to explain the terms nodes, antinodes, and stationery waves 4. students to dlstinguish between fundamental note and overtones. | &apos; Sonometer &apos; T for \* Violin \* Flute \* Drum \* guitar \* Microphone \* Cathode rays oscilloscope pipe musical instruments, string musical instruments, electronic musical instruments, | Is e student able to explain e concept of musical sound? Is the student able to identify factors affecting loudness, pitch and quality of musical sound? is the student able to identify different musical instruments?  is the student able to explain the terms used in | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  |  |  |  |  |  |  |  |  | helical string,  marker pens, white sheet, | stationery waves? can the student  determine the frequency of a note?  Is the student able to differentiate between the fundamental notes and overtones? Is the student able to explain the  concept of  resonance as applied to sound? Is e student able to construct a simple musical  instr |  |  |
| The student should have ability to: Construct simple musical instrument | 1. identify factors affecting loudness, pitch and quality of a musical sound. 2. identify the different musical instruments 3. explain the terms stationery wave, nodes and antinodes 4. determine the frequency of a musical note 5. differentiate between fundamental note and overtones 6. explain the concept of   resonance as applied in sound waves   1. construct a simple musical   instrument | March | Week 3 | WAVES | musical sounds | 4 | 1. To lead students to explain the concept of resonance as applied to sound. 2. To invite an expert to support students to construct a simple musical instrument.   vii) Students to | 1. The students to distinguish between fundamental note and overtones 2. Students to demonstrate and explain resonance as applied to sound. | &apos; Sonometer &apos; T for \* Violin \* Flute | Is e student able to explain e concept of musical sound? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| -- | -- | -- | -- | -- | -- | -- | MID TERM  EXAM-22/03/2024-27/03/2024 MID  TERM BREAK-28/03/2024-07/04/2024 | -- | -- | -- | -- | -- |
| The student should have ability to: Construct simple musical instrument | 1. identify factors affecting loudness, pitch and quality of a musical sound. 2. identify the different musical instruments 3. explain the terms stationery wave, nodes and antinodes 4. determine the frequency of a | March | Week 4 | WAVES | musical sounds | 4 | 1. To lead students to explain the concept of resonance as applied to sound. 2. To invite an expert to support students to construct a simple musical instrument.   vii) Students to | 1. The students to distinguish between fundamental note and overtones 2. Students to demonstrate and explain resonance as applied to sound. | &apos; Sonometer &apos; T for \* Violin \* Flute | Is e student able to explain e concept of musical sound? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |

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|  | musical note   1. differentiate between fundamental note and overtones 2. explain the concept of   resonance as applied in sound waves   1. construct a simple musical   instrument |  |  |  |  |  |  |  |  |  |  |  |
| The student should have ability to: identify rays in a spectrum | The student should be able to:   1. ~explain the concept of the electromagnetic spectrum 2. identify the main bands of the electromagnetic spectrum~ 3. detect infra-red, visible and ultra violet   rays | April | Week 3 | WAVES | Electromag netic Spectrum | 4 | 1. To guide students to explain the concept of the .electromagnetic spectrum. 2. To guide students to draw and label the electromagnetic spectrum. 3. Students to identify bands of electromagnetic spectrum 4. To guide students .tn groups to detect infra red rays, visible and ultra-violet rays. | 1. Students to explain the concept of electromagnetic spectrum 2. students to draw and label the electromagnetic spectrum. 3. Students in groups to detect the infra red rays, visible and ultra violet rays | Glass prism Rain bow o  Thermometer Iron \* heater \* Sun rays | Is the student able to ~explain the concept of the electromagnetic spectrum?  Is the student able to identify the main bands of the electromagnetic spectrum?  Can the student infra-red visible and ultraviolet  rays? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: identify rays in a spectrum | 1. identify the main bands of the electromagnetic spectrum~ 2. detect infra-red, visible and ultra violet rays | April | Week 4 | WAVES | Electromag netic Spectrum | 4 | 1. To guide students to explain the concept of the .electromagnetic spectrum. 2. To guide students to draw and label the electromagnetic spectrum. 3. Students to identify bands of electromagnetic spectrum 4. To guide students .tn groups to detect infra red rays, visible and ultra-violet   rays. | 1. students to draw and label the electromagnetic spectrum. 2. Students in groups to detect the infra red rays, visible and ultra violet rays | Glass prism Rain bow o  Thermometer Iron \* heater \* Sun rays | Is the student able to identify the main bands of the electromagnetic spectrum?  Can the student infra-red visible and ultraviolet  rays? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| The student should have ability to: apply electroma gnetism in agriculture | The student should be able to:a) identify the application of microwaves, radio-waves, infra-red,  b) explain the importance of electromagnetic waves in  Agriculture and climate.gamma  rays | May | Week 1 | WAVES | Applicanon s of  Electromag netic Wave in Daily Life | 2 | 1. To guide students to identify the applications of microwaves, radio- waves, infra red, gamma rays and x-rays. 2. To support students to perform a project work on the Importance of electromagnetic wave. | 1. The students to identify the applications of microwaves, radio- waves, red, gamma rays and x-rays 2. Student to carry out experiment on importance of electromagnetic waves in agriculture | \* Radio signal &apos; Vision &apos; Vitamin A \* Hospital treatment &apos; Domestic use | Is the student able to identify the applications of microwaves,  radio- waves, infra-red gamma rays and x-rays?  Is student able to explain the  application of electromagnetic wave in  agriculture and  climate. | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: determine the direction and presence of force of a magnetic field | The student should be able to  a) explain how electric current produces a magnetic field;   1. identify the pattern of the magnetic field lines around a straight conductor 2. determine the | May | Week 1 | ELECTRO MAGNETI SM | Magnetic  fields due to a current  - caring conductor | 2 | 1. To assist students to explain how electro current produce magnetic field. 2. To guide students to carry out experiments to investigate the magnetic fields associated with electric current passing through a straight wire, loop and solenoid. 3. guide the students to state the right hand rule and the cork screw rule iv) guide the students to determine the directions and repulsion of force | 1. Students to perform an experiment to produce magnetic field due to a current carrying wire 2. students to carry out experiments to investigate the magnetic fields associated with electric current passing through a straight wire, loop and solenoid. 3. students to determine the direction of the forces acting | &apos; Wire \* Compass needle  \* iron fillings \* Source of electricity thumb, wire, u shaped magnet, mercury, iron fillings | Is the student able to explain how electric current produce magnetic field?  Is the student able to identify the pattern of the magnetic field lines around a straight conductor? is the student able to determine the | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  | direction of  magnetic field around a current carrying conductor   1. determine the presence and direction of a force on a current carrying conductor in a magnetic field 2. determine the direction of force of two current carrying conductors when the current is flowing in the   same or o |  |  |  |  |  |  | on a current carrying conductor placed at the right angle to a magnetic field   1. students to apply flemings left hand rule and tell direction of a force due to a current carrying conductor 2. students to carry out experiments to show the direction |  | direction of force when the current is flowing in the same direction or opposite direction? is the student able to determine the presence and direction of force in a magnetic field? |  |  |
| The student should have ability to: construct a simple transforme r | the student should be able to:   1. explain the concept of electromagnetic induction 2. state the laws of electromagnetic induction 3. explain the concept of self and mutual induction | May | Week 2 | ELECTRO MAGNETI SM | Electromag netic induction | 2 | 1. guide the student to demonstrate the production of induced current using coil and magnet 2. guide the students to explain the concept of electromagnetic induction 3. guide the students to state the fardays and lenzs laws of electromagnetic induction 4. guide the students to explain the concept of self induction and mutual induction 5. expose and demonstrate the structure of an induction coil to the students and guide them on how it works | 1. students to explain the concept of electromagnetic induction 2. students to state the fardays and lenzs laws of electromagnetic induction 3. students to explain the concept of self induction and mutual induction 4. explain the mode of action of a.c and d.c generators and how to convert a.c generator to d.c | source fo  electricity, iron ring, coil, galvanometer, induction coil,  chart of  induction coil,chart of a.c and a.c generator | is the student able to explain the concept of electromagnetic induction? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: construct a simple transforme r | 1. describe the mode of action of induction coil 2. describe the mode of action of   a.c and d,c generator   1. construct a simple step up and step down transformer | May | Week 2 | ELECTRO MAGNETI SM | Electromag netic induction | 2 | vi) teacher to explain the flow of a.c and  d.c from a coil rotating in a magnetic field  vii) explain the mode of action of a.c and  d.c generators and how to convert a.c generator to d.c  viii) discuss the application of a.c generator and the advantages and disadvantages of a.c over d.c generator | 1. construct a simple step up and step down transformer 2. explain the concept of self and mutual induction 3. describe the mode of action of induction coil 4. describe the mode of action of a transformer 5. discuss the application of a t | source fo  electricity, iron ring, coil, galvanometer, induction coil,  chart of  induction coil,chart of a.c and a.c generator | is the student able to state the laws of electromagnetic induction?  is the student able to state the self and mutual induction?  is the student able to describe the mode of action of induction coil  is the student able to state the mode of action of a.c and d.c?  is the student able to construct a simple  transformer? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| The student should have ability to: draw the structure of an atom | The student should be able to:   1. describe the structure of the nucleus of an atom; 2. explain the atomic number, | May | Week 3 | RADIOAC TIVITY | Nucleus of an atom | 2 | 1. guide the students to discuss the structure of an atom 2. assist the student to give the meaning of atomic number mass, number, and isotopes of an element 3. assist the student to mention the forces holding the nucleus | 1. students to discuss the structure of an atom 2. student to give the meaning of atomic number mass, number, and isotopes of an element 3. student to mention the forces holding the nucleus | model of an atom, chart of an atom,playing card | is the student able to explain the structure of an atom?  can the student explain mass  number, atomic  number and | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  | mass number and isotopes of and atom  c) mention  forces holding  the nucleus |  |  |  |  |  |  |  |  | isotope?  is the student able to mention the forces holding the nucleus |  |  |
| The student should have ability to: apply radioactivi ty in daily life | the student should be able to explain:   1. concept of radioactivity 2. describe the properties of radiations emmited by radio active elements 3. explain the nucleus changes to the emission of alpha, beta and gamma rays 4. explain the detection of   gamma, alpha  ,and beta   1. describe the half life as   applied in radioactive substances   1. determine the half life of a radiaoctive   element | May | Week 3 | RADIOAC TIVITY | Natural radioactivit y | 2 | 1. assist the students explain the concept of radioactive | 1. students explain the concept of radioactive 2. students to describe the properties of alpha, gamma, and beta rays 3. students to explain the nuclear changes due to emmision of alpha, beta and gamma radiations | mild radioactive elements, periodic tabel, chart showing bombarding elements, chart showing emmissions, photographic plates, spark chamber, wilson cloud chamber, graph showing radioactivity | is the student able to explain the concept of radioactivity? can the student describe the  properties of  particle emitted during radiations?  can the student explain the nuclear charge due to radiations? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| -- | -- | -- | -- | -- | -- | -- | TERMINAL EXAM-  20/05/2024-30/05/2024 END OF TERM ONE HOLIDAY  BREAK-31/05/2024-01/07/2024 | -- | -- | -- | -- | -- |
| The student should have ability to: apply radioactivi ty in daily life | the student should be able to explain:   1. concept of radioactivity 2. describe the properties of radiations emmited by radio active elements 3. explain the nucleus changes to the emission of alpha, beta and gamma rays 4. explain the detection of   gamma, alpha  ,and beta   1. describe the half life as   applied in radioactive substances   1. determine the | July | Week 1 | RADIOAC TIVITY | Natural radioactivit y | 4 | 1. assist students to describe the properties of alpha, gamma, and beta rays 2. guide the students to explain the nuclear changes due to emmision of alpha, beta and gamma radiations 3. guide the students to detect the alpha, beta and gamma radiations 4. guide the students to describe the meaning of half life as applied in radioactive substance and highlight the meaning of background radiations 5. help students to demonstrate half life using various methods 6. guide the students to identify the application of natural radioactive substances | 1. students to detect the alpha, beta and gamma radiations 2. students to describe the meaning of half life as applied in radioactive substance and highlight the meaning of background radiations 3. students to demonstrate half life using various methods 4. students to identify the application of natural radioactive substances | mild radioactive elements, periodic tabel, chart showing bombarding elements, chart showing emmissions, photographic plates, spark chamber, wilson cloud chamber, graph showing radioactivity | can the student explain the detection of alpha, beta and gamma rays?  is the student able to describe the application of half life in  radioactivity?  is the student able to determine the half life of an element?  can the student mention the  application of isotopes in life? | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |

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|  | half life of a radiaoctive  element |  |  |  |  |  |  |  |  |  |  |  |
| The student should have ability to: produce artificial radioactivi ty | The students should be able to:   1. distinguish between natural and artificial radioactivity 2. describe the methods of producing artificial radioactivity isotopes 3. mention the application of artificial   radioactivity | July | Week 2 | RADIOAC TIVITY | artificial radioactivit y | 4 | 1. guide the students to distinguish artificial and natural radioactivity 2. describe the methods of producing artificial radioactive isotopes 3. guide the students to mention the application of artificial radioactivity | 1. students to distinguish artificial and natural radioactivity 2. describe the methods of producing artificial radioactive isotopes iii)students to mention the application of artificial radioactivity | charts of  bombarding elements, periodic table, | is the student able to distinguish between artificial and natural radioactivity?  is the student able to describe the methods of producing artificial radioactivity?  is the student able to mention applications of artificial radioactivity? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: protect oneself from radiations | the student should be able to:   1. explain the effects of nuclear radiations on human body 2. protect himself or herself from human radiations   hazards | July | Week 3 | RADIOAC TIVITY | radiation hazards an safety | 4 | 1. explore the effects of nuclear radiations on the human body ii) guide the students to understand how to protect themselves from nuclear radiations effects | 1. students explore the effects of nuclear radiations on the human body 2. guide the students to understand how to protect themselves from nuclear radiations effects | charts showing the hazards of radiations radioactive shield | is the the student able to explain the effects of nuclear radiations?  is the student able to protect himself from the effects of radiations? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: apply knowledg e of  nuclear fusion and fission in  life | THE STUDENT  should be able to:  a) explain the nuclear fusion and fission b) mention the  applications of nuclear fission and fusion | July | Week 4 | RADIOAC TIVITY | Nuclear fission and fusion | 2 | 1. To assist students explore the concept of nuclear fusion and fission 2. To assist students in groups to mention the application of nuclear fusion and fission | 1. Students explore the concept of nuclear fusion and fission 2. Students in groups to mention the application of nuclear fusion and fission | Charts showing the nuclear fusion and fission, charts of nuclear power station | is the student able to explain nuclear fusion and fission? is the student able to explain the applications of nuclear fusion and fission? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: describe the use of cathode rays | the student should be able to:   1. explain the production of cathode rays 2. state the properties of cathode rays 3. state the applications of cathode ray tube | Augus t | Week 1 | THERMIO NIC EMISSION | Cathode rays | 2 | 1. to guide students to explain production of cathode rays 2. to facilitate the student to state the properties of cathode rays 3. assist the students to state the applications of cathode rays | 1. students to explain production of cathode rays 2. the student to state the properties of cathode rays 3. students to state the applications of cathode rays | TV,  computer,maltos e cross,paddle wheel, | is the student able to explain the production of cathode rays?  is the student able to state the  properties of cathode rays?  is the student able to describe the use of cathode rays in  daily life? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Describe the mode  of action of x-rays | The student should be able to:   1. describe the structure and mode of action of X- ray tube 2. distinguish between soft and hard x- rays and | Augus t | Week 2 | THERMIO NIC EMISSION | X-Rays | 2 | 1. to guide the student to describe the structure and mode of action of x-ray tube 2. guide the students to distinguish between soft and hard x- ray and their production 3. guide the students to view the position of X-rays in electromagnetic spectrum 4. guide arrange for students to study | 1. student to describe the structure and mode of action of x-ray tube 2. student to draw and label the diagram of x-ray tube 3. students to discuss the applications of X-rays in daily life 4. write notes on their | charts showing x-ray tubes, electromagnetic spectrum,x-ray unit center, x-rays photographic plate | is the student able to describe the mode of action of x-ray tube?  is the student able to distinguish between soft and hard X-rays?  is the student able | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  | their production   1. state the properties of X-rays 2. identify the applications of X-rays in daily   life |  |  |  |  |  | visit to the x-rays in diagnostic of patients | educational trip |  | to state the  properties of X-rays? |  |  |
| The student should have ability to: Demonstr ate concept of semicondu ctors | The student should be able to:   1. explain the concept of energy bands in solids | Augus t | Week 3 | ELECTRO NICS | Semicondu ctors | 2 | 1. To guide students to explain the concept of energy bands in solids. 2. To guide students to explain the difference between electrical conductivity for conductors, semiconductors and insulators. | 1. Students to draw the energy bands in solids. 2. Students to distinguish between conductors, semiconductors and insulators. | Chart of energy and in solid Conductors, Semiconductors and Insulators Battery Galvanometer Connecting wires  Chart of energy levels for  Conductor; Semiconductor and Insulator. Silicon, Germanium semiconductors. Chart showing clopping  process.. | Is the student able to explain the concept of energy bands in solids?  Can the student distinguish between conductors, semiconductors and insulators? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Demonstr ate concept of semicondu ctors | 1. distinguish between conductors, semiconductors and insulators; 2. describe the effects of   temperature on the conductivity of conductors,: semiconductors and insulators;   1. identify types of semiconductors 2. describe the mechanism of clopping intrinsic   semiconductors. | Augus t | Week 3 | ELECTRO NICS | Semicondu ctors | 2 | 1. To guide students to describe the effects of temperature on conductivity of conductors, semiconductors and insulator. 2. To guide students to identify types of semiconductors. 3. To guide. students to describe the mechanism of dapping impurities in intrinsic Students to describe the mechanism of dopping intrinsic semi conductors. | 1. Students to describe die energy levels of conductors, semiconductors and insulators. 2. Students to identify types of semiconductors. | -  Chart of energy and in solid Conductors, Semiconductors and Insulators Battery | Is the student able to describe the effect of  temperature on the conductivity of conductors, semiconductors and insulators?  Is the student able to identify types of semiconductors?  Is the student able to describe the mechanism of clopping. intrinsic semiconductors?. | Olevel Physics Form Four By BN, Physics For Secondary School Form 3&4 By SCSU&MoV  ET-Zanzibar | . |
| -- | -- | -- | -- | -- | -- | -- | MID TERM  EXAM-23/08/2024-29/08/2024-MID  TERM BREAK-30/08/2024-16/09/2024 | -- | -- | -- | -- | -- |
| The student should have ability to: To demonstra te concept of diodes | The student should be able to:   1. describe the construction of P-N junction; 2. Explain the mode of action of a P-N junction; 3. identify the types of diodes; 4. construct a half-wave and | Septe mber | Week 3 | ELECTRO NICS | Diodes | 2 | i) To lead students to describe the construction of a P-N junction. ii) To guide students to explain the mode of action of a P-N junction.   1. To display different types of diodes 2. To guide students to discuss a circuit which shows half and full- wave rectifications. | 1. Students to describe the structure of a P-N junction. 2. Students to explain the mode of action of a P-N junction. 3. Students to identify types of diodes. 4. Students to construct circuits which show half-wave and full-wave rectifications. | Chart showing diode.  Diodes  P-N junction diode  Different types of diodes  Light emitting. diode (LED).  D.0 source Diodes | Is the student able to explain mode of action of P-N junction?  is the student able to identify the types of diode?  Is the student able to . identify the types of diode?  is the student able | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |

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|  | full-wave rectifier. |  |  |  |  |  |  |  | Capacitor Resistors  Connecting wires | to construct a half-wave and  full-wave rectifier? |  |  |
| The student should have ability to: To demonstra te concept of transistor | The student should be able to:  a) describe the construction of a PNP transistor;  h) explain the mode of action of a PNP transistor;   1. identify the types of   transistors;   1. outline the applications of   transistors in daily life. | Septe mber | Week 3 | ELECTRO NICS | Transistor | 2 | 1. To display transistors and show a diagram of a transistor. 2. To display transistors and diagram of a transistor. 3. To assist students to identify types of transistors. 4. Through question and answer technique to lead students to outline the applications of transistors. | 1. Students to describe the construction of a transistor. 2. Students to describe the structure of a transistor. 3. Students to identify types of transistors. 4. Students to outline the applications of transistors. | Chart showing a transistor  Different types of transistors (PNP and NPN).  Radio TV  Voltage amplifier | Is the student able to describe the construction of PNP junction?  Is the student able to explain the mode of action of a PNP transistor? Is the student able to identify the types of  transistors?  Is the student able to outline the applications of transistors in daily  life? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Demonstr ate concept of analog and digital signals | The student should be able to:   1. explain the concept of analogue signals; 2. explain the concept of digital signals; 3. design and a single-stage amplifier. | Septe mber | Week 4 | ELECTRO NICS | Single Stage Amplifier | 2 | 1. To explain the analogue signal 2. To assist students to explain the concept of digital signals. 3. To guide students to design single stage amplifier. | 1. Students to explain the concept of analogue signals. 2. Students to explain the concept of digital signals 3. Students in groups to design single stage amplifier. | Chart showing analogy signal Mobile phone (analogy)  Chart showing digital signal.  Mobile phone (Digital)  Watch Transistor Resistors  Oscilloscope | Is the student explain the  concept of analogue signals? Is the student able to explain the concept of digital signals?  Is the student able to design a single stage amplifier? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Demonstr ate importanc e of  astronomy in every  day life | The students should be able to:   1. explain the concept of astronomy; 2. explain the importance of   astronomy in every day life. | Septe mber | Week 4 | ELEMENT ARY ASTRONO MY | Introductio n to  Astronomy | 2 | 1. To guide students to explain the concept of astronomy. 2. To guide students to explain the importance of astronomy. | 1. Students, by using think-pair-share technique to explain the concept of astronomy. 2. Students in groups to discuss on importance of astronomy in daily life. | Model of  universe  Chart of universe  Clear sky  Charts of  heavenly bodies | Is the student able to explain the concept of astronomy?  Is the student explain the  importance of astronomy in daily life? . . | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Demonstr ate concept of solar system | The student should be able to:   1. distinguish between a star and a planet; 2. explain the force of   gravitation which maintains celestial bodies  in their orbits. | Septe mber | Week 4 | ELEMENT ARY ASTRONO MY | Solar System | 4 | 1. To guide students to distinguish between star and planet. 2. To lead students to explain the concept of force of gravitation which maintains bodies in their orbits. | 1. Students in groups to give the difference between a star and planet. 2. Students in group to explain the force of gravitation which maintains bodies in their orbits. | Venus star  Chart of the solar system Binoculars  Earth and moon Two bodies Chart of Earth | Is the student able to distinguish between a star and planet?  Is the student able to explain the force of  gravitation which maintain bodies in  their orbits? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: To | The student should be able to:   1. explain the concept of constellation 2. identify | Octob er | Week 1 | ELEMENT ARY ASTRONO MY | Constellatio ns | 2 | 1. To guide students to explain the concept of constellation. 2. To guide students to identify kinds of constellations. 3. To guide students to discuss the uses of constellations in navigation and | 1. Students to explain the concept of constellation. 2. Students to identify and name common constellations. 3. Students to discuss the uses of constellations in | Chart of different constellations.  Chart of different constellations.  Chart showing | Is the student able to explain the concept of constellation?  Is the student able | Physics For Secondary Schools, Students Book Form  Four. By | . |

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| demonstra te the  concept of constellati on | constellation s;  c) uses of constellation s in every day life, |  |  |  |  |  | seasons prediction. | navigation and seasons prediction. | seasons. | to identify constellations?  Is the student able to use  constellations in  every day life? | T.I.E |  |
| The student should have ability to: Demonstr ate knowledg e of  Structure and Compositi on of the  Earth | The student should be able to:   1. describe the structure of the earth; 2. describe the composition of the layers of the earth. 3. explain the importance of the layers of the earth. | Octob er | Week 1 | GEOPHYS ICS | Structure and Compositio n of the Earth | 2 | 1. To guide students to describe the structure of the earth. 2. To guide students to describe the composition of the layers of the earth. 3. To guide students to explain the importance of the layers of the earth. | 1. Students to describe the structure of the earth 2. Students in groups to describe the composition of the layers of the earth. 3. Students in groups to explain the importance of the layers of the earth | Chart of stracture of the earth.  Global  Chart of  structure of the earth  Minerals | Is the student able to describe the structures of the earth?  Is the student describe the composition of the layers of the earth?  Is the student able to explain the importance of the  layers of the earth? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Describe earthquak es and volcanoes | The student should be able to:   1. explain the origin of   volcanoes;   1. describe   effects of  volcanoes;   1. explain the origin of   earthquake;   1. describe the principle of measurement of earthquake; 2. identify precautions against earthquake hazards. | Octob er | Week 2 | GEOPHYS ICS | Earthquake s and Volcanoes | 2 | 1. To guide students to explain the origin of volcanoes; 2. To guide the students to describe the effects of volcanoes. 3. To guide students to explain the concept of the earthquake. iv) To describe the principle of measurement of earthquakes.   v) To assist students to identify the hazards precautions against earthquake hazards. | 1. Students to explain the origin of volcanoes. 2. Students to describe the effects of volcanoes. c) Students in groups to explain the origin of earthquakes. 3. Students to discuss in groups how to record the measurement of earthquake. 4. Students in group to identify the precautions against earthquake and hazards. | Charts of  volcanoes. Pictures showing effect of volcano.  Chart of earth quake  Picture of earthquake.  Seismometer chart Seismometer. | Is the student able to explain the origin of  volcanoes?  Is the student able to describe the effects of volcano?  Is the student able to explain the origin of  earthquakes?  Is the student able to describe the principle of measurement of earthquake?  Is the student able to identify precautions against earthquake  hazards? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have ability to: Describe Structure and Compositi on of the Atmosphe re | The student should be able to:   1. describe the vertical structure of the   atmosphere;   1. describe the composition of the atmosphere. 2. explain the importance of various layers of the atmosphere. | Octob er | Week 2 | GEOPHYS ICS | Structure and Compositio n of the Atmosphere | 2 | 1. To lead students to describe the vertical structure of the atmosphere. 2. To guide students to describe the compositions of the atmosphere. 3. To guide students to explain the importance of various layers of the atmosphere. | 1. Students to describe the vertical structure of the atmosphere. 2. Students by using think-pair-share technique to describe the composition of atmosphere. 3. Students to explain the importance of various layers of the atmosphere. | Chart of  structure of atmosphere.  Chart of  structure of atmosphere showing the layers.  Chart of  structure of atmosphere showing the layer.  Communication  system. | Is the student able to describe the vertical structure of the atmosphere?  Is the student able to describe the composition of the atmosphere? .  Is the student able to explain the importance of various layers of the atmosphere? | Physics For Secondary Schools, Students Book Form  Four. By T.I.E | . |
| The student should have | The student should be able to:   1. explain the greenhouse | Octob er | Week 3 | GEOPHYS ICS | The Greenhouse Effect and Global | 4 | 1. To guide the students to explain the green house effect 2. To lead students to identify sources of green house. | 1. Students in groups to explain the green house effect. 2. Students to identify | Chart of green house  Chart of ozone | Is the student able to explain the green house effect? Is the | Physics For Secondary Schools, Students | . |

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| ability to: Demonstr ate Greenhous e Effect and Global Warming | effect;   1. identify   sources of greenhouse;   1. explain the occurrence of global warming; 2. state the consequence s of global warming. |  |  |  | Warming |  | 1. To assist students to explain the occurrence of global warming. 2. To guide students to state the consequences of global warming. | sources of green house.  c) Students in groups to explain the occurrence of global warming | layer. ,  Green house gases.  Chart of effect of global warning. Picture of effect of global  warming Melting ice caps. | student able to identify sources of green house? Is the student able to explain the  occurrence of global warming? Is the student able to state the consequences of  global warming? | Book Form  Four. By T.I.E |  |
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