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Advanced level physics syllabus tanzania pdf

FORM IFORM IIFORM IIIFORM IIIIFORM VFORM VIQUIZ1.0 INTRODUCTIONClick here to see the syllabus in PDF1.1 Background information1.2 Subject Description1.3 Grounds for reviewing physics1.1 Background informationThis new Physics Syllabus for Form V and Form VI replaces the 1997 syllabus that has been phased out. The previous syllabus was not competence-based and most teaching and learning strategies were the student was not centred. The revision process has observed a paradigm shift from the content-based curriculum to a skills-based curriculum. The teaching and learning strategies used in this audited syllabus are learned and activity-oriented. Students are expected to be engaged in a variety of activities that culminate in meaningful learning. In addition, the revision has also taken into account the requirements of the Secondary Education Development Plan (SEDP), and horizontal issues.1.2 Subject description physics in advanced-level secondary education gives students a contemporary and coherent understanding of energy, matter and their interrelationships. It focuses on investigating natural phenomena and then applying patterns, principles, theories and laws to explain the physical behavior of the universe. The study of physics is based on understanding and application of a number of basic laws and principles that govern the microscopic and macroscopic holds. Physics gives students an understanding of systems that are the basis for the development of technical applications. This syllabus is intended for secondary school students, using this syllabus teachers will be able to apply different methods and strategies to guide students to perform activities related to the subject content of their level. Students are expected to be engaged in a variety of activities that will conclude meaningful learning.1.3 Reasons for reviewing the physics syllabus were based on stakeholders' comments, which identified four areas for improvement. It was revealed that some content was outdated, difficult, repetitive and irrelevant. In this revised physics syllabus, the mechanics were splinted in three independent subjects namely; mechanics, fluid dynamics and properties of matter to avoid repetitive content. On the other hand, local now brings of topics, dimensions and errors have been dealt with under a topic known as measurement. Some content has been shifted to appropriate/substance/subtopics such as AC theory that shifted from electromagnetism to current electricity, kinetic theory from Heat to properties of matter, and electrolysis to chemical substance. It should be noted that in this review topics such as Geophysics and Maser were detrailerized and new subject has been introduced such as environmental physics so as to cover the cross-cutting issues and make room for some content from Geophysics. Similarly, new subtopics have been introduced in various subjects. Difficult subjects were by reorganising content and sub-subject matter and improving teaching and learning strategies. FORM IFORM IIFORM IIIFORM IIIIFORM VFORM VIQUIZ4.0 GENERAL COMPETENCEClick Here to see Syllabus in PDFAt the end of the course student should have the ability to:1.Communicate using the language of Physics.2.Apply theories, laws and principles of physics.3.Use the scientific method in the design and conduct of experiments in Physics.4.Apply scientific and technical knowledge and skills in the management, conservation and sustainable use of the environment.5.Manage and manage various technical devices to solve problems of daily life.6.Work independently for self-progress in the field of new physics borders.7. Use ICT to acquire and generate knowledge. TANZANIA CERTIFICATE OF UPPER SECONDARY EDUCATION (A-LEVEL) FORM V - PHYSICS Syllabus CLASS COMPETENCES At the end of the Form V course the student should have the ability to: 1. Communicate effectively using the language of Physics. 2. Apply theories, laws and principles of mechanics, heat, vibrations and waves, and electrostatics in daily life. 3. Make appropriate and accurate measurements. 4. Investigate physical phenomena scientifically. 5. Use and maintain household appliances. CLASS PAINTING At the end of form V course, students should be able to: 1. Identify standard symbols and nomenclature used in Physics. 2. Explain theories, laws and principles of mechanics, heat, vibrations and waves, and electrostatics. 3. Demonstrate knowledge and skills in the use of measuring instruments. 4. Design and perform experiments in mechanics, heat, vibrations and waves, and electrostatics. 5. Design and construct simple technological appliances. 1.0 MEASUREMENT 1.1 Physical quantities (10 periods) 1.2 Errors (16 periods) 2.0 MECHANICS 2.1 Newton's exercise law (24 periods) 2.2 Projectile movement (6 periods) 2.3 Uniform circular motion (12 periods) 2.4 Simple harmonic movement (12 periods) 2.5 Gravity (14 periods) 2.6 Rotation of rigid rigid bodies (32 periods) 3.0 FLUID DYNAMICS 3.1 Streamline flow and continuity (6 periods) 3.2 Bernoulli principle (8 periods) 3.3 Viscosity and turbulent flow (30 periods) 4.0 PROPERTIES OF MATTER 4.1 Surface tension (12 periods) 4.2 Elasticity (26 periods) 4.3 Kinetic Theory of gases (8 Periods) 5.0 HEAT 5.1 Thermometers (10 Periods) 5.2 Heat transfer 5.2.1 Thermal conduct (16 periods) 5.2.2 Thermal convection (12 periods) 5.2.3 Thermal radiation (12 periods) 5.3 First law of thermodynamics (18 periods) 6. 0 VibrationS AND WAVES 6.1 Mechanical vibrations (6 periods) 5.3 First Law of thermodynamics (18 periods) 6. 0 VibrationS AND WAVES 6.1 Mechanical vibrations (6 periods) 6.2 Wave Motion (12 periods) 6.3 Sound (16 periods) 6.4 electromagnetic waves (6 periods) 6. 3 5 Physical optics 6.5.1 Interference (12 periods) 6.5.2 Diffraction (10 periods) 6.5.3 Polarization (10 Periods) 6.6 Doppler power (8 periods) 7.0 ELECTROSTATIC7.1 The electric field (6 periods) 7.2 Electrical potential (8 periods) 7.3 Capacitance (16 periods) TANZANIA CERTIFICATE OF SECONDARY EDUCATION (A-LEVEL)FORM VI - SYLLABUSCLASS COMPETENCES At the end of form Six students should have the ability to: 1. Apply theories, laws and principles of electromagnetism, current, electronics, atomic physics and environmental physics in daily life. 2. Apply laboratory knowledge in solving daily life problems. 3. Using sustainable energy conversion systems for environmental conservation. 4. Use ICT tools when accessing information, simulation and modelling of physical phenomena. CLASS OBJECTIVES At the end of form six courses the student should be able to: 1. Explain theories, laws and principles of electromagnetism, current, electronics, atomic physics and environmental physics. 2. Design and perform experiments in electromagnetism, current, electronics, atomic physics and environmental physics. 3. Acquire skills in designing sustainable energy conversion systems. 4. Understanding Computer Aided Programs in Learning Physics. 1.0 ELECTROMAGNETISM 1.1 Magnetic fields (12 Lessons) 1.2 Magnetic properties of materials (16 periods) 1.3 Magnetic forces (8 periods) 1.4 Electromagnetic induction (20 Lessons) 1.5 Magnetic field of earth (15 periods) 2.0 CURRENT EL 2.1 Electrical conduction in metals (25 periods) 2.0 2.2 Electrical conduction in gases (12 periods) 2.3 Alternating current (26 periods) 3.0 ELECTRONICS 3.1 Band theory of solids (6 periods) 3.2 Semiconductors (14 Periods) 3.3 Transistors (25 periods) 3.4 Logic gates (15 periods) 3.5 Operational Amplifier (14 Periods) 3.6 Transistors (25 periods) 3.4 Logic gates (15 periods) 3.5 Operational Amplifier (14 Periods) 3.6 Telecommunications (26 periods) 4.0 ATOMIC PHYSICS 4.1 Structure of atom (8 periods) 4.2 Quantum physics (30 periods) 4.3 LASER (16 Periods) 4.4 Nuclear physics (432 Periods) 5.0 ENVIRONMENTAL PHYSICS 5.1 Agricultural physics (20 periods) 5.2 Energy from the environment (20 periods) 5.3 Earthquakes (12 periods) 5.4 Environmental pollution (28 periods) Flourish © Investment Firm, Firm Tanzania Education Advanced Physics Syllabus (A - Level) , 2013. Physics Syllabus Tanzania, Advanced Certificate of Secondary Education Examination (ACSEE), The goals of ACSEEGoals for this survey are to assess learnerâ€™s knowledge and ability to pursue with further education such as diplomas and degree courses; to examine the extent to which learners can use the skills gained to meet the social, political, economic and technological challenges facing the individual and national development as a whole. Therefore, candidates at this level are expected to possess the following skills in a wide range of activities: knowledge, understanding, application, analysis, synthesis and evaluation. FORM V SUBJECTS MISDIMENSIONS OF PHYSICAL QUANTITIESMECHANICALSProjectileNewton's laws of motionUniform circular motionRotation of rigid bodiesGravityIntert harmonic movement (SHM)Surface tensionLiquid MechanicsStrength of materialsThermometerThermal ConductionTerm convectionThermal radiationConductionEthical theory of gasesModel thermodynamicsMechanical wavesNature of wavesDiffractionPolarization of light FORM VI TOPICS1. ELECTROSTATICSCoulombs lagElectric field intensityElectrical potentialVan de Graaf generatorCapacitance2.CURRENT ELECTRICITYElectrical conduction in metalsInduction of electrolytesElectrical conduction in gases3. ELECTROMAGNETISMMagnetic fieldsMagnetic properties of materialsMagnetic forcesInduced EmfA.C theory4. ELECTRONICSEnergy strips in solidsSemiconductorsTransistor5.STRUCTURE OF ATOMElectronBohr's model of hydrogen atomLight amplification by stimulated radiation (LASER) and Magnetic amplification by stimulated radiation (MASER)Quantum physicsNuclear physics6. GEOPHYSICSThe atmosphereEarth scales and volcanoMagnetic fields of the Earth