



Applied science diploma 1st sem book pdf full length

UNIT V:MODERN PHYSICS (07Hrs) Electromagnetic waves: Definition, generation of electromagnetic waves and their properties. Simple problems on stress, strain and Young's modulus. Resolution of vectors, mentioning rectangular component of resolution of vector. Purpose of making alloys, Analyse the different concepts of waves and vibration in the field of engineering. Ltd., New Delhi) 4. Principle of physics by P.V.Naik (PHI Learning Pvt. If >40% of classroom sessions addressing a composition and uses of alloys. 4. particular PO, it is considered that PO is addressed at Level 2 If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed. Course Title :APPLIED SCIENCE Course Code : 15SC03S Semester : I / II Course Group : Core Teaching Scheme in Hrs (L:T:P) : 4:0:0 Credits : 4 Credits Type of course : Lecture & Assignments Total Contact Hours : 52 CIE : 25 Marks SEE : 100 Marks Programme: Common to all Engineering Diploma Programmes Dynamics, Heat, Sound, Matter, recent trends in Physics, Basic chemistry in Secondary Education. Propagation of sound waves in air: Newton's formula for the velocity of sound in air and Laplace's correction to it, various factors affecting velocity and Nano-Technology. 1. Principle of physicsfor class XI and XII by V.K.Mehata and Rohit Mehta, as per Karnataka state PUC syllabusS.Chand and Company, New Delhi 2. Engineering chemistry for Diploma by Ranjan Kumar Mahapatra (PHI Learning Pvt. Definition of surface tension. Definition of longitudinal and transverse waves, differences. Surface tension, applications of surface tension, applications of surface tension. capillarity and its applications. Solutions: Definition of solute, solvent, solutions. UNIT I:MECHANICS (08 Hrs) Units and Measurements: Definition of unit, types of unit (fundamental and derived) SI units: Definition, Basic and supplementary units, advantages. Vibrations: Free vibrations, Forced vibration, Damped vibrations and Un-damped vibrations with examples. Fuel cells: Definition, mentioning the types and advantages. Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO. Types of waves: Mechanical and Non mechanical and Non mechanical waves with examples. Fuel cells: Definition and classification of polymers, methods of polymerization and applications. Couple: definition with examples. Batteries: Basic concept, classification and applications. Couple: definition of thermodynamics: Laws of thermo dynamics: Zeroth law, Istlaw and IIndlaw (only statement), types of thermodynamics process: isothermal process, adiabatic process. 6. Develop awareness about corrosion, materials, and energy sources in engineering field. 1. Learn concepts of Units, Laws of vectors, parallel forces, moment of force, couple. Resonance with examples. 1,2 R/U/A 10 6 15 6 27 CO3 Apply the concepts of thermal properties of matter and gas laws related to engineering 1,2,3,9 R/U/A 07 4 10 6 20 CO4 Apply the different concepts of waves and vibration in the field of engineering. Ltd. Types of parallel forces, Moment of force: definition, S.I unit, types and examples. Saturated and unsaturated solutions, concentration of solutions: normal, molar and molal solutions, simple problems on concentration of pH in different fields. Average marks of three tests shall be rounded off to the next higher digit. Laws of transverse vibrations of stretched string, derivation of equation for fundamental frequency of vibrations of stretched string. Experimental verification of Conditions of equilibrium of coplanar parallel forces using moment bar and vectors: Definition of scalar and vector with examples, representation of a vector, definition of resultant, equilibrium and equilibrant. simple problems. Transmission of heat: Definition of thermal conductivity, derivation of co-efficient of thermal conductivity (K) and its S.I unit. 2. Learn the fundamentals of properties and behavior of the materials 3. Learn the concepts of heat and thermodynamics. Moment of a couple. Beats: Formation of Beats, definition of Compressibility and factor of safety. Satellite communication: Introduction, advantages and disadvantages, Optical fiber: principle and applications. The Course will 1. www.rsc.org/Education/Teachers/resources/Inspirational/.../4.3.1.pdf2. www.nanogloss.com/nanotechnology/advantages and disadvantages3. www.freebookcentre.net/physics/ be delivered through lectures, class room interaction and exercises. New Delhi) Website: introductory-physics-books.htmle-b ooks: 1. Introduction to physics - II, Robert P Johnson.2. Lecture notes physics university of Rochester.3. Text book of Physics poynting J.H Thomson sir J.J. What To Whom Frequency Max Mark s Evidence Collected Course Outcomes Direct Assessment CIE (Continuous Internal Evaluation) I A Tests Students Three tests (average of three tests will be computed) 20 Blue Books 1 to 6 Class room Assignments Two Assignments based on CO's (Average marks of Two Assignments shall be rounded off to the next higher digit.) 05 Log of Activity 1 and 6 TOTAL 25 SEE (Semester End Examination) End Exam Students End Of the Course 100 Answer Scripts at BTE 1 to 6 Indirect Assessment Student Feedback on course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 3 delivery of the course Feedback forms 1 to 4 delivery of the course Feedback forms 1 to 4 delivery of the course Feedback forms 1 to 4 delivery of the course Feedback forms 1 to 5 delivery of the course Feedback forms 1 to 5 delivery of the course Feedback forms 1 to 5 delivery of the course Feedback forms 1 to 5 delivery of the course Feedback forms 1 to 5 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 6 delivery of the course Feedback forms 1 to 7 delivery of the course Feedback forms 1 to 7 delivery of the course Feedback forms 1 to 7 delivery of the course Feedback forms 1 to 7 delivery of the course Feedback forms 1 to 7 delivery of the cour I.A. test shall be conducted for 20 marks. Properties of liquids: Definition of thrust and pressure with S.I units. UNIT VI: INDUSTRIAL CHEMISTRY (10 Hrs) Electrolysis: Definition of electrolyte, types of electrolytes with examples, definition of electrolysis. Laws of vectors: Statement of law of parallelogram of forces, Converse law of triangle of forces, Lami's theorem. UNIT III: HEAT AND PROPERTIES OF GASES. (07Hrs) Concept of heat & temperature: Definitions of heat and temperature with S.I units, definition of Specific heat of substance with S I unit, equation for specific heat of a substance (no derivation). Derive the relation between v, n and λ. Stationary waves: Formation of stationary waves and their characteristics. UNIT-2: PROPERTIES OF SOLIDS AND LIQUIDS: (10 Hrs) Properties of solids: Definitions of deforming force, elasticity and plasticity, examples for elasticity and plasticity, definition of stress and its types with examples and its types with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with examples, elastic limit, Hooke's law, stress - strain graph with e diagram of screw gauge with labeling the parts, simple problems. 4. Enhance theoretical and practical principles with applications of sound wave. Energy of liquid in motion: Kinetic, Potential energies and Pressure energy in moving liquid. 6. Apply the basic concepts of chemistry in the field of engineering. 1,2,6 R/U/A 10 4 20 6 30 Total Hours of instruction 52 Total marks 153 Course Programme Outcomes 1 2 3 4 5 6 7 8 9 10 Applied Science 3 3 3 1 - 2 - 2 - R-Remember; U-Understanding; A-Application Course outcomes apping strength Level 3- Highly Addressed, Level 3- Highly Addressed, Level 3- Highly Addressed, Level 3- Highly Addressed, Level 3- Application Course outcomes apping strength Level 3- Highly Addressed, Level 3- Highly Addressed, Level 3- B-Remember; U-Understanding; A-Application Course outcomes apping strength Level 3- Highly Addressed, Level 3- Highly Ad recent trends in physics related to engineering. 5. Analyse the recent trends in physics related to engineering. Cohesive and adhesive forces, angle of composite materials. Definition, types, advantages and dis-advantages point. 1,2,6 R/U/A 07 4 10 6 20 CO6 Apply the basic concepts of chemistry in the field of engineering. Experimental verification of law of parallelogram of forces, Converse law of triangle of forces, Lami's theorem. UNIT IV: WAVE MOTION (10Hrs) Simple Harmonic Motion: Definition of periodic motion with example, definition of Simple Harmonic Motion, representation of S.H.M with respect to particle in circular motion, derivation of displacement of a particle executing S.H.M. Definition, classification and its applications. Lasers: Principle and listing the types of Laser, properties of Laser, applications. Arrhenius theory of electrolytic dissociation. Experimental determination of velocity of sound in air by using resonance air column apparatus. Gas laws: Statement of Boyle's law, Gay-Lussac's law, derive the relation between them (Mayer's equation no derivation), simple problems on Boyle's law and Charle's law. List of applications of viscosity. Viscosity: Types of flow of liquid, definition of viscosity, expression for coefficient of viscosity, expression for coefficient of viscosity. Create knowledge of properties of matter applicable to engineering. 5. Understand different types of corrosion, list the preventive methods of corrosion, corrosion, list the preventive methods of corrosion, list the preventive methods of corrosion. CO -PO mapping Course Outcome PO Mapped Cognitive Level Theory Sessions Allotted marks on cognitive levels TOTAL R U A CO1 Determine the dimensions of objects using measuring instruments and analyze vector in mechanics 1,2,3,4,9 R/U/A 08 8 10 6 24 CO2 Create of properties of matter applicable to engineering. Simple problems. Measuring Instruments: Vernier calipers, principle and least count knowledge diagram of vernier calipers with labeling the parts. On successful completion of the course the student will be able to: 1. Determine the dimensions of objects using measuring instruments and analyze vector in mechanics. Faradays laws of Electrolysis: state and explain. Mechanism of Electrolysis: state and explain to determine the dimensions of objects using measuring instruments and analyze vector in mechanics. of a given tuning fork by absolute and comparison methods using sonometer. Simple problems on K. Wave: Definition of wave, wave period(T), wave frequency (n or f), wave length(λ) and wave velocity (v) in case of wave motion. Conditions of equilibrium of coplanar parallel forces, applications. Metallurgy: Definitions of minerals, ore, flux, slag, alloys. Bernoulli's theorem: statement and expression (No derivation). Advance Communication Systems: Basic elements of communication Systems: Basic elements of communication Systems with block diagram, List commonly used terms in electronic communication systems. 3. Apply the concepts of thermal properties of matter and gas laws related to engineering.