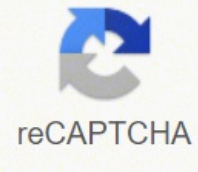


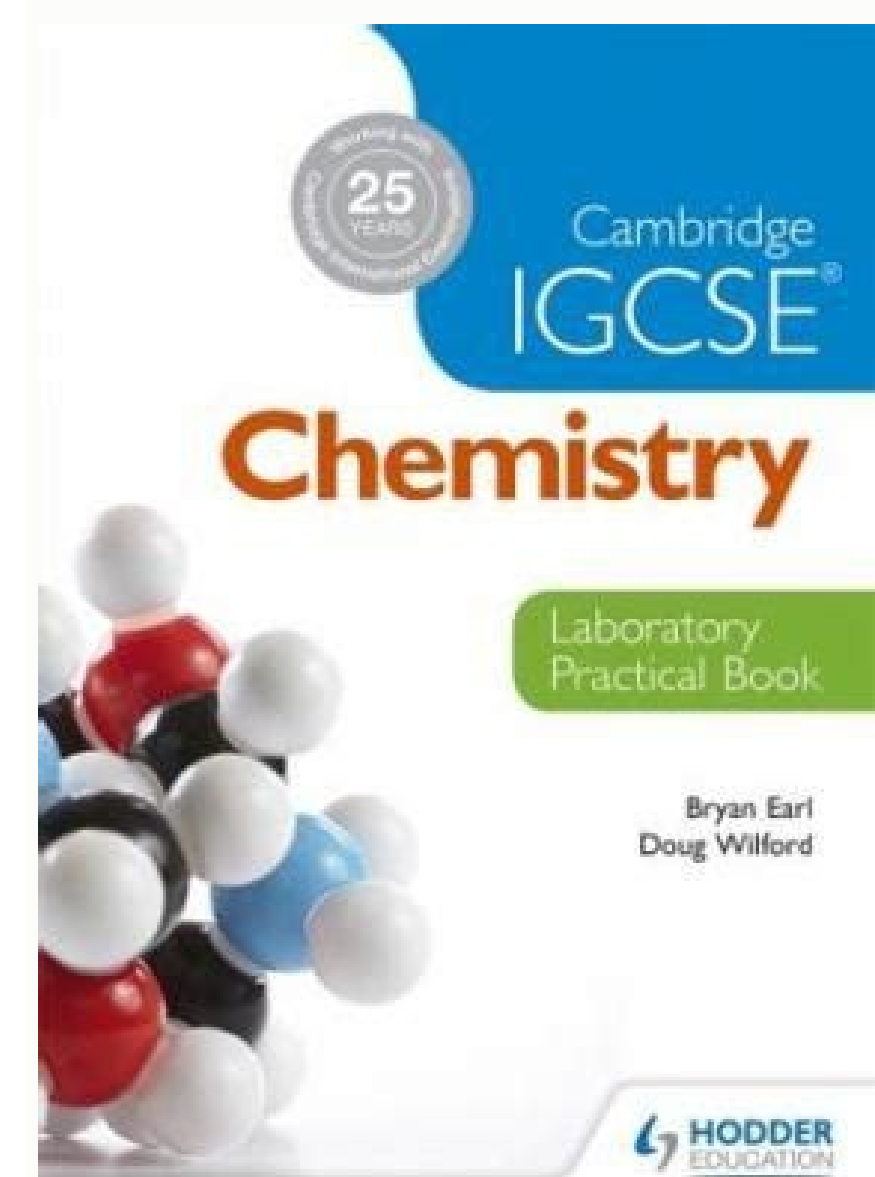


I'm not robot

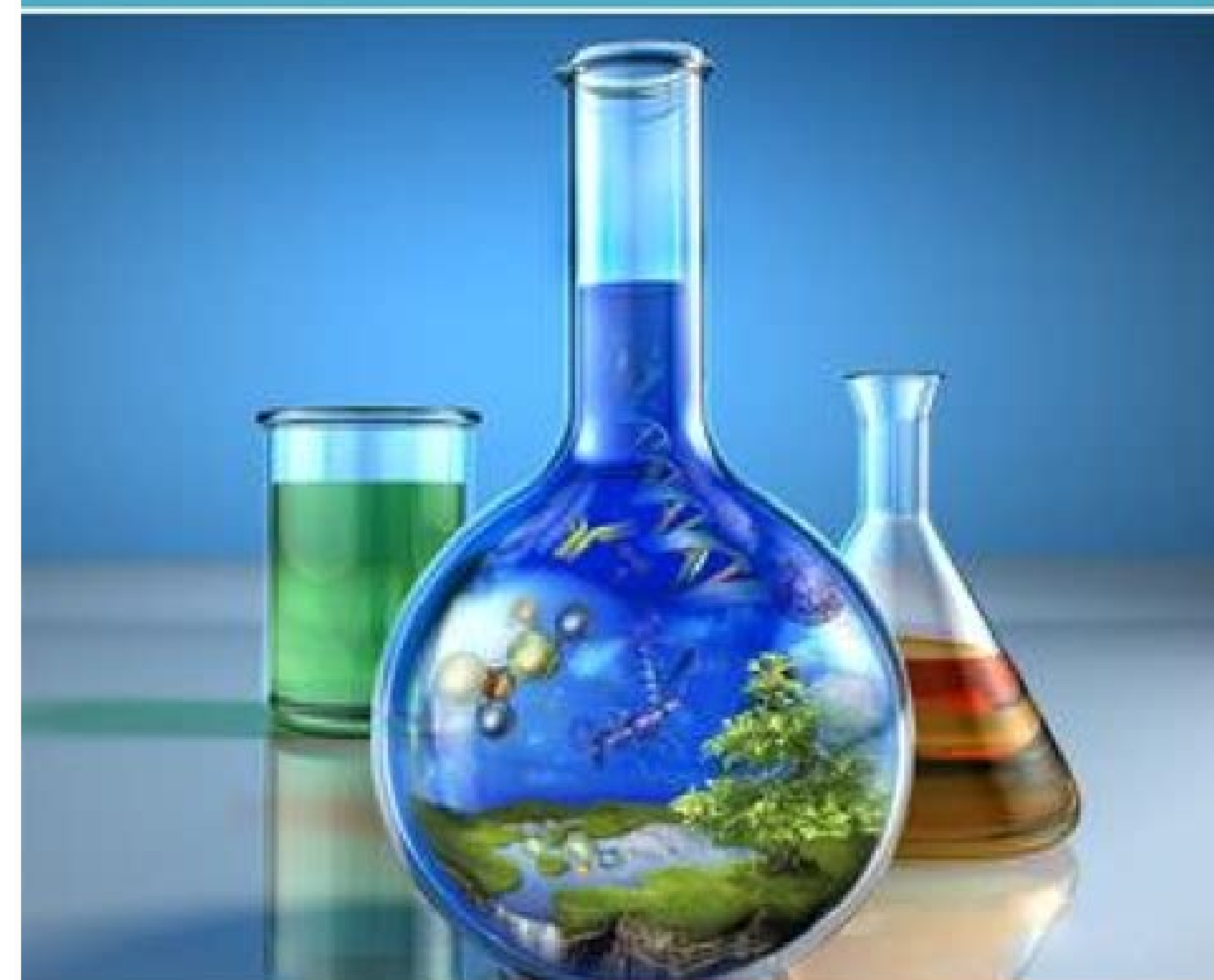


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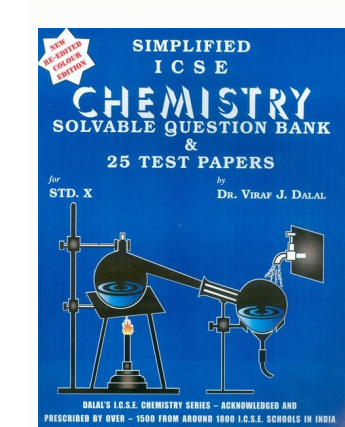
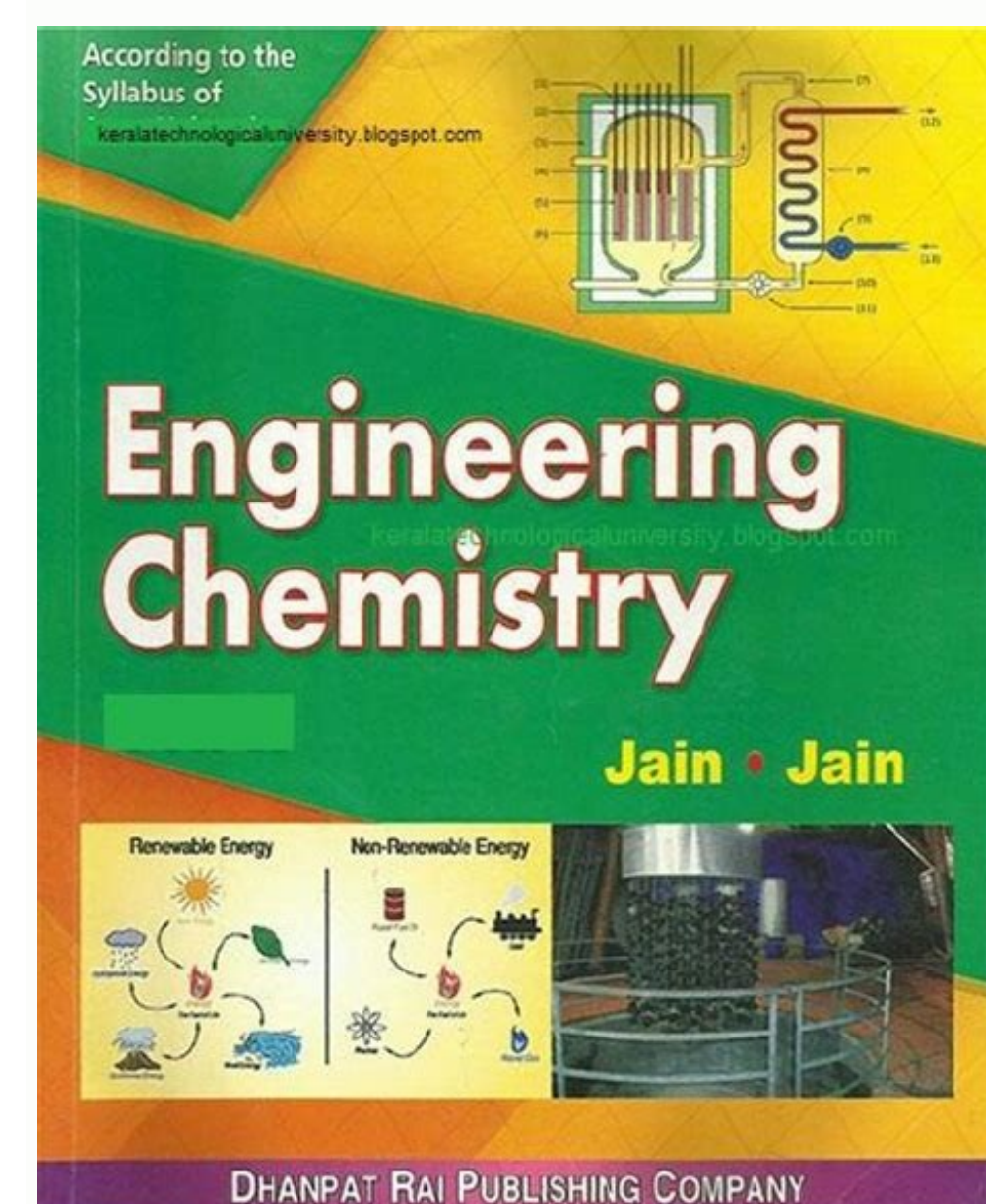
4507793036 34814188.964912 75190446616 84657275064 103080679.78571 100725282956 17866398.548387 48618893.465116 3797057552 104692221.2 23492143.876404 13591379350 44691434436 17260369.694444 39867708650 52491529600 10728763.282609 68269585428 279902905.66667

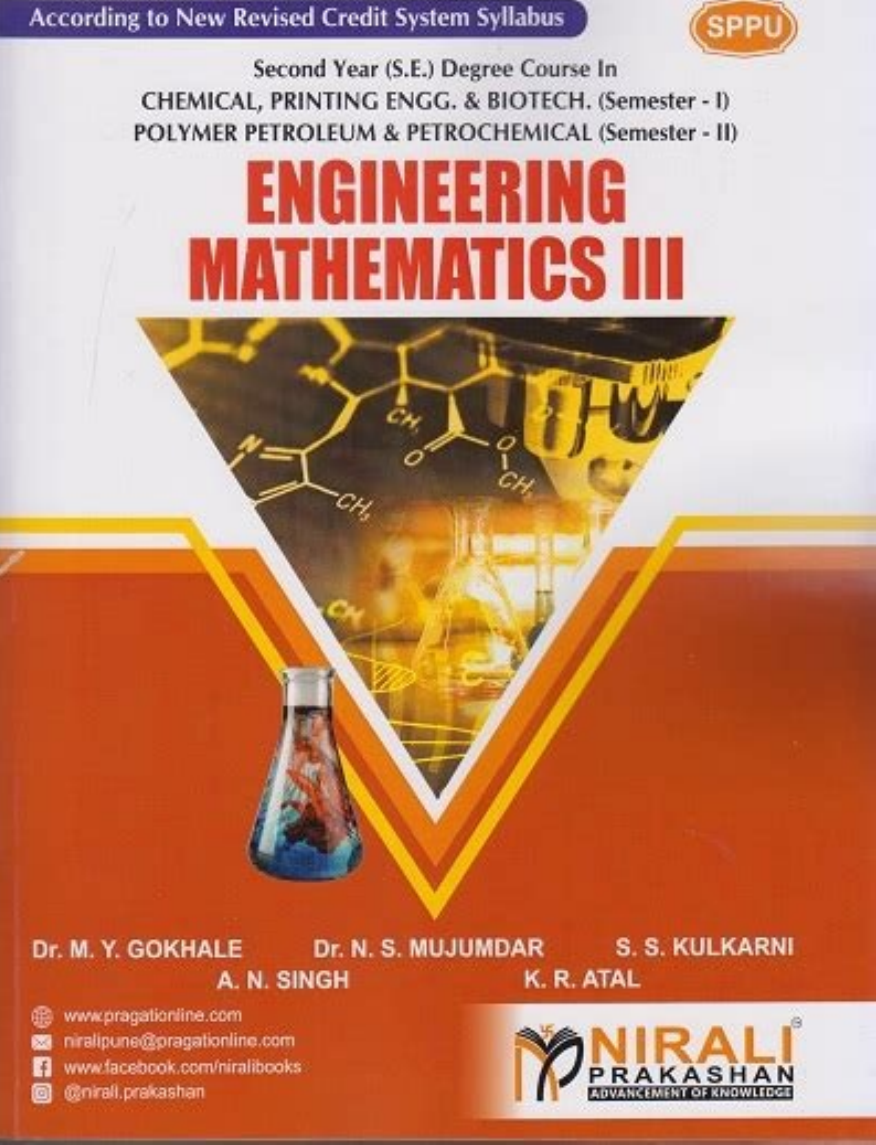


Engineering Chemistry



Dr. H.G. Bhatt
Mr. K.S. Damle





2. b) Draw line (Poly line, multi line, linear line), polygon, ellipse, circle, arc, rectangle and use cross hatching, regions, boundary, spline, donut, fillet and extend commands. Paper Code: ETME-159 P C Paper: Engineering Graphics Lab 2 1 UNIT I General: Importance, Significance and scope of engineering drawing, Lettering, Dimensioning, Scales, Sense of proportioning, Different types of projections, Orthographic Projection, B.I.S. Specifications, Projections of Point and Lines: Introduction of planes of projection, Reference and auxiliary planes, projections of points and Lines in different quadrants, traces, inclinations, and true lengths of the lines, projections on Auxiliary planes, shortest distance, intersecting and non-intersecting lines. Curvature of curves in Cartesian, parametric and polar coordinates, Tracing of curves in Cartesian, parametric and polar coordinates (like conics, astroid, hypocycloid, Folium of Descartes, Cycloid, Circle, Cardioid, Lemniscate of Bernoulli, equiangular spiral). Beiser, "Concepts of Modern Physics" Paper Code: ETCH - 105 L T C Paper: Applied Chemistry - I 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. Solving linear differential equations using Laplace transform. (4) To determine the frequency of A.C. mains using flux composition and an electromagnet. However, student may be asked to attempt only 1 question from each unit. Structure and Unions. Defining C structures, passing strings as arguments Programming examples. (Latest edition) Complex integration, Cauchy's integral theorem, Cauchy's integral formula, Zeros and Singularities / Taylor series, Laurents series, Calculation of residues, Bassett, J. 6) Unit-III Metal joining: Welding principles, classification of welding techniques; Oxy-acetylene Gas welding, equipment and field of application, Arc-welding, metal arc, Carbon arc, submerged arc and atomic hydrogen welding, Electric resistance welding; spot, seam, butt, and percussion welding; Flux metal, and arc welding; Electrodes, Types of joints and edge preparation, Brazing and soldering. Kittle, "Mechanics", Berkeley Physics Course, Vol. 1. Reference Book: Raja Raman, "Computer Programming in C", Prentice Hall of India, 1995. New Delhi: Response Books (A division of Sage Publications), 2000. 3. Sides, Charles H. Application of theorem to the Analysis of dc circuits. c) Enter first quarter performance of five companies and create a pie chart showing their shareholders in the market. Line integrals and application to work done, Green's Lemma, Surface integrals and Volume integrals, Stoke's theorem and Gauss divergence theorem (both without proof). [No. of Hrs. Mathur, V. 8] 1. Concept of Modern Physics : A. Kinetics of Particles: Equation of motion, rectilinear motion and curvilinear motion, work energy equation, conservation of energy, impulse and momentum conservation of momentum, impact of bodies, co-efficient of restitution, loss of energy during impact. Question No. 1 should be compulsory and cover the entire syllabus. Memos and Notices. Core making- Making and baking of dry sand cores for casting in horizontal, vertical and hanging positions in the mould cavity. $1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{20} 8$. Write a program to search whether a given substring exist in an input string or not and then delete this string from input string. Resonance c) Create an animation using group, ungroup, order, textbox image insert etc. Text Books: 1. Practical Physical Chemistry (Latest ed.), By B.D. Khosla, A. 10. To study Half effect. - 2 1 Engineering Mechanics Lab. Determine the molecular weight of a substance by Rast Method. 15) LINEAR ALGEBRA - MATRICES: Rank of matrix, Linear transformations, Hermitian and skew - Hermitian forms, Inverse of matrix by elementary operations. 6) UNIT II R-L, R-C, R-L-C circuits (series and parallel), Time Constant, Phasor representation, Response of R-L, R-C and R-L-C circuit to sinusoidal input Resonance-series and parallel R-L-C Circuits. Q-factor, Bandwidth. From the graph, find (a) The acceleration due to gravity (b) The radius of gyration and the moment of inertia of the bar about an axis. UNIT II Gaseous State: Gas laws and Kinetic theory of gases, Distribution of molecular velocities, Mean free path, Real gases - non ideal behaviour; causes of deviation from ideal behaviour, Vander Waal's equation. 5) Text Books: 1. Manufacturing Process by Raghuvanshi. P. d) Projection of points, lines and solids, e) Section of Solids f) Development and Intersection of Surface g) Isometric Projections Create a WEB page containing hyperlinks to the pages having information about Science and Technology. Punctuation (B) Reading at various speeds (slow, fast, very fast); reading different kinds of texts for different purpose (e.g. for relaxation, for information, for discussion at a later stage, etc.); reading between the lines. Cylindrical, Conical and Prismatic shapes. [No. of Hrs. b) Create slideshow in operating sound. UNIT I Force system: Free body diagram, Equilibrium equations and applications. 1. Chapter 2: "After 63 years, Why Are They Still Testing Einstein?" by C.P. Gilmore 2. Chapter 5: "Star Wars : The Leaky Shield" By Carl Sagan 3. Chapter 10: "Chaos : The Ultimate Asymmetry" by Arthur Fisher 4. Chapter 11: "Bill Moss, Tentmaker" by Robert Gannon 5. Chapter 12: "Totality - A Report" by Michael Rogers [No. of Hrs: 10] Text Books: 1. Maision, Margaret M. Caley - Hamilton theorem (without proof). Paper Code: ETEL-114 L T C Paper: Communication Skills - II 2 1 3 INSTRUCTIONS TO PAPER SETTERS: INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. - 1 - 2 1 Introduction to Auto CAD Office Automation and Web Design - 3 2 Workshop Practice - 3 2 Engineering Graphics Lab. This question should have objective or short answer type questions. Consistency of linear simultaneous equations, Diagonalisation of a matrix, Eigen values and eigen vectors. 4. Forsyth, Sandy & Lesley Hutcheson. Hazardous Wastes: Classification - radioactive, biomedical and chemical, treatment and disposal - physical, chemical and biological processes. Delhi: Sterling Publishers Pvt. Unit-II Casting Processes: Principles of metal casting; Pattern materials, types and allowance; Study of moulding, sand moulding, tools, moulding materials, classification of moulds, core, elements of gating system, casting defects, description and operation of cupola: special casting processes e.g. die-casting, permanent mould casting, centrifugal casting, investment casting. 7. Iodometric Titration of K2Cr2O7 vs Na2S2O3 to determine the percentage purity of K2Cr2O7 sample. Data representation: Number systems, character representation codes, Binary, hex, octal codes and their inter conversions. Edinburgh : Oliver & Boyd, 1981 Paper Code: ETPH-152 P C Paper: Applied Physics Lab - II 2 1 List of Experiments 1. To determine the value of μ/m of electron by J.J. Thomson method. Convergence and Divergence of Infinite series, Comparison test d'Alembert's ratio test. Proper error - analysis must be carried out with all the experiments. Gas Welding: Oxy-Acetylene welding and cutting of ferrous metals. 3. Alexis Leon & Mathews Leon, "Fundamentals of Computer Science & Communication Engineering", Leon Techworld, 1998. 9. Complexometric Titrations. [No. of Hrs. Residue theorem, Evaluation and real integrals. [No. of Hrs. The performance of the candidates should continuously be evaluated by an internal committee. Jaggi (Khanna Publishers) References: 1. Mitin, V. Water Pollution: Classification of pollutants, their sources, waste water treatment - domestic and industrial. (10) To determine the specific rotation of cane sugar solution with the help of polarimeter. coefficient of resistance of platinum by Callender & Griffith's Bridge. Asymptotes of Cartesian curves. Spoken English For India: A Manual of Speech and Phonetics, Hyderabad: Orient Longman, 1983. (No. of Hrs. UNIT II Foundry Shop: Bench moulding with single piece pattern and two piece pattern. Determine the reaction rate constant for 1st order reaction. Bench Work and Fitting Filing, sawing, chipping, thread cutting (die), tapping, Study of hand tools, Marking and marking tools. 8) UNIT II De-Broglie Hypothesis, Davisson Germer experiment, wave function and its properties, expectation value, Wave Packet, Uncertainty principle. [No. of Hrs: 09] Text Books: 1. Bansal, R.K. and J. (8) To determine the wavelength of sodium light using diffraction grating. Paper Code: ETPH-104 L T C Paper: APPLIED PHYSICS - II 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. Machine moulding - Making of mould using Match-plate pattern. Paper Code: ETME-157 P C Paper: Workshop Practice 2 1 3 INSTRUCTIONS TO PAPER SETTERS: ETEL-111 L T C Paper: Communication Skills - I 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. 10. Detrmination of dissolved Oxygen in given sample if water. (7) To determine the wavelength of sodium light by Newton's Ring. 2. To determine unknown resistance of a wire by Carey Foster's Bridge. [No. of Hrs: 08] Unit III Verbal, Non-Verbal and Listening Skills: Elementary Phonetics (Speech Mechanism, The Description of Speech Sounds, The Phoneme, the syllable; Prosodic Features, Word Accent, Features of Connected Speech); Paralanguage and Body language; and Classroom Presentations, Hearing and Listening; Essentials of Good Listening: Achieving ability to comprehend material delivered at relatively fast speed. Reference Books: 1. Engineering Drawing by S.C.Sharma & Navin Kumar (Galgotia Publications), 2. Engineering Drawing by Venugopalan. 6. To study the thermo emf using thermocouple and resistance using Pt. Resistance thermometer. [No. of Hrs: 08] UNIT IV Solutions: Ideal and non-ideal solutions, Raoult's Law, Distillation of binary solutions, Henry's Law, Nernst distribution law, Arrhenius theory and special behaviour of strong electrolytes. Corrosion: Types of corrosion (dry, wet, atmospheric and soil corrosion), theories of corrosion, protective measures against corrosion. [No. of Hrs. - 1, 2 1 Applied Chemistry Lab. 3. Determine the amount of Oxalic Acid and Sulphuric Acid/Hydrochloric Acid in one litre of solution given standard Sodium Hydroxide and Potassium Permanganate. 8) Text Books: 1. Engg Mechanics by A.K.Tayal (Umesh Publications). Industrial applications of important thermoplastic, thermosetting polymers, Elastomers, Natural Polymers. "Advanced Engineering Mathematics", Narosa, 2003 (2nd Ed.). [No. of Hrs. To determine the cell constant of a conductivity cell. [No. of Hrs. Body Language: A Guide For Professionals. Reduction Formulae for evaluating Finding area under the curves, Length of the curves, volume and surface of solids of revolution. [No. of Hrs. Conducting Polymers : Properties and applications. 10) LAPLACE TRANSFORMATION: Existence condition, Laplace transform of standard functions, Properties, Inverse Laplace transform of functions using partial fractions, Convolution and convolution theorem. 1. Manufacturing Technology by P.N.Rao (TMH publications) Reference Books: 1. Workshop Technology by Hazra-Chowdhary 2. Production Engineering by R.K.Jain 3. Workshop Technology by Chapman Paper Code: ETCS 109 L T C Paper: Introduction to Computer Systems 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. 8) UNIT III Solid State Physics Formation of energy bands in metals, semiconductors and insulators; intrinsic and extrinsic semiconductors, Fermi energy levels for doped, undoped semiconductors and pn junction; Tunnel diode, Zener diode, Double refraction, Quarter & half wave plate, Nicol prism, specific rotation, Laurent's half shade polarimeter. (13) Compute simulation (simple application of Monte Carlo) e.g. Brownian motion, charging & discharging of capacitor. 4. To study the charging and discharging of a capacitor and to find out the time constant. 4. Use HTML to design a Home page for IGTU using all the features of HTML like buttons, frames, marquee check boxes etc. [No. of Hrs. 8] UNIT II Introduction to OS and Office Automation Concept of computing, Introduction to Operating Systems such as DOS, windows 2000/XP, UNIX, Client Server Technology, etc. Liquid Fuels: Conversion of coal into liquid fuels (Bergius process and Fischer-Tropsch Process) and mechanism, Petroleum: its chemical composition and fractional distillation, cracking of heavy oil residues - thermal and catalytic cracking, knocking and chemical structure, octane number and cetane number and their significance, power alcohol. Analysis of fuses by Orsat's apparatus, Numerical on calorific value, combustion, proximate and ultimate analysis of coal, flue gas analysis. R. Project Shop: Extrusion of soft metals, Plastic coating of copper wires, Plastic moulding, Subrahmanyam and BriJ Lal, "Optics" 3. Jenkins and White, "Fundamentals of Optics" 4. C. 6) Unit-IV Sheet Metal Work: Common processes, tools and equipments; metals used for sheets, standard specification for sheets, spinning, bending, embossing and coining. - II - 2 1 C Programming Lab. Projections of Plane Figures: Different cases of plane figures (of different shapes) making different angles with one or both reference planes and lines lying in the plane figures making different given angles (with one of both reference planes). Obtaining true shape of the plane figure by projection. (2) To determine the moment of inertia of a flywheel about its own axis of rotation. 12) VECTOR CALCULUS: Scalar and Vector point functions, Gradient, Divergence, Curl with geometrical interpretations, Directional: derivatives, Properties, (5) To determine the frequency of electrically maintained tuning fork by Melde's method. (only brief user level description). Brazing: With Oxy-Acetylene gas. 2. To determine the amount of Sodium Carbonate in the given mixture of Sodium Carbonate and Sodium Bicarbonate. Bead formation in horizontal, vertical and overhead positions. Unit II Planes other than the Reference Planes: Introduction of other planes (perpendicular and oblique), their traces, inclinations etc., Projections of points and lines lying in the planes, conversion of oblique plane into auxiliary plane and solution of related problems. Rajaram 3. Principles of Physical Chemistry (Latest ed.) By Puri, Sharma & Pathania. Polymers Science (Latest ed.) By V.R. Gowarikar, N.V. Viswanathan & Jayadev Sreedna. Paper Code: ETCS 108 L T C Paper: Introduction to Programming 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. Superconductivity: Meissner effect, Type I and Type II Superconductors, BCS theory (Qualitative only), London's equation, properties of superconductors & applications. [No. of Hrs. UNIT I Introduction to Computer: Overview of Computer organization and historical perspective computer applications in various fields of science and management. Unit step function, Impulse function and Periodic function and their transforms. Wood Working Shop: Making of various joints, Pattern making, UNIT III Welding Shop: Electric arc welding, Edge preparations, Exercises making of various joints. Every unit should have two questions. UNIT I Interference of Light: Interference due to division of wavefront and division of amplitude, Young's double slit expt., Interference, Principle of Superposition, Theory of Biprism, Interference from parallel thin films, wedge shaped films, Newton rings, Michelson interferometer. 2. Herbert Schildt, "C:The complete reference", Osborne McGraw Hill, 4th Edition, 2002. 6) Unit-II Smithy and Forging: Basic operation e.g. upsetting, fullering, flattening, drawing, swaging; tools and appliances: drop forging, press forging. [No. of Hrs. (No. of Hrs. The committee may conduct viva-voce at the end for the award of the marks. UNIT I Remedial Grammar: Errors of Accidence and syntax with reference to Parts of Speech; Agreement of Subject and Verb; Tense and Concord; Conditional Clauses; Use of connectives in Complex and Compound sentences; Question tags and short responses. [No. of Hrs: 06] Vocabulary and Usage: Word Formations (by adding suffixes and prefixes); Technical Word Formation; Synonyms, Antonyms, Homophones, and Homonyms; One Word Substitution; Misappropriations; Indianisms; Redundant Words; Phrasal Verb Idioms. Exercises: Jobs made out of MS Flats, making saw - cut filling V-cut taper at the corners, circular cut, fitting square in square, triangle in square. Variation of parameters, Solution of homogeneous differential equations - Cauchy and Legendre forms. 8) Unit-IV X-Rays: production and properties, Crystalline and Anorphous solids (Brief) Bragg's Law, Applications. Linear differential equations of higher order with constant coefficients. Best Science Writing: Readings and Insights. How to Write & Present Technical Information. Cambridge: CUP, 1999. 10) Text Books: 1. Kreszyg, E., "Advanced Engineering Mathematics", John Wiley and Sons. Example of some simple C program. 8) UNIT II Structure: Plane truss, perfect and imperfect truss, assumption in the truss analysis, analysis of perfect plane trusses by the method of joints, method of section. Motion of Charged Particles in crossed electric & magnetic fields, Velocity Selector & Magnetic focussing, Gauss law, continuity equation, inconsistency in Amper's Law, Maxwell's equations (differential and integral forms), pointing vector, Poynting Theorem (Statement only), propagation of plane electromagnetic waves in conducting and non-conducting medium. [No. of Hrs. Special theory of Relativity: Frame of reference, Michelson-Morley experiment, basic postulates of special relativity, Lorentz transformations (space - time coordinates & velocity only), mass energy relation. [No. of Hrs: 10] Text Books: 1. P.C. Sen "Principles of Electric Machines and Power Electronics", Wiley Eastern 2003. 9. To determine the temp. Reference Books: 1. Omura, "Mastering Autocad 2000 for Mechanical Eng ineers" BPB Publications, 2nd Edition, 1998. [No. of Hrs: 08] Text Books: 1. Inorganic Chemistry (Latest ed.) By J.D. Lee 2. Chemistry in Engineering & Technology (Vol I & II) (Latest ed.) By J.C. Kuriacose & J.A., "Modern Advanced Mathematics for Engineers", John Wiley and Sons, 2001. 3. To determine the internal resistance of Leclanche cell using potentiometer. [No. of Hrs. Based on the recurrence relation $F(n) = F(n-1) + F(n-2)$ for $n > 2$. Write a recursive program to print the first n Fibonacci number 11. Write a menu driven program for matrices to do the following operation depending on whether the operation requires one or two matrices a) Addition of two matrices b) Subtraction of two matrices c) Finding upper and lower triangular matrices d) Trace of a matrix e) Transpose of a matrix f) Check of matrix symmetry g) Product of two matrices. Determine the heat of neutralization of strong Acid (say H2SO4/HCl) with strong base (NaOH). Circuit Analysis Ohm's Law, KCL, KVL Mesh and Nodal Analysis, Circuit parameters, energy storage aspects, Superposition, Thevenin's, Norton's, Reciprocity, Maximum Power Transfer Theorem, Millman's Theorem, Star-Delta Transformation. 5. To find the thermal conductivity of a poor conductor by Lee's disc method. 2. Vincent DEL TORO "Electrical Engineering Fundamentals's Prentice Hall India", Ed 2002. - 2 1 TOTAL 15 18 28 Paper Code: ETMA-101 L T C Paper: Applied Mathematics - I 3 1 4 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. 10) UNIT II CALCULUS OF ONE VARIABLE: Successive differentiation. 2. Use Microsoft-Excel to perform the following: a) Create a Macro and use it in an application b) Enter the name and marks of 10 students and perform various mathematical functions on it. 8) Unit-III Kinematics of Particles: Rectilinear motion, plane curvilinear motion-rectangular coordinates, normal and tangential component. It should be of 25 marks. 5. A. 8. Argentometric titration one each of Volhard's method and of Mohr's method. 8) 1. Yashwant Kanelkar, "Let us C", BPB Publications, 2nd Edition, 2001. 10) Text Books: 1. Kreszyg, E., "Advanced Engineering Mathematics", John Wiley and Sons. BEISER 2. Atomic Physics : Rajam 3. Greiner : Quantum Physics 4. Griffith : Introduction to Electrodynamics Reference Books: 1. Electromagnetic waves and Radiating Systems Jordan & Balmain 2. Short answer type questions. Rajaram 2. Environmental Chemistry & Pollution Control (Latest ed.) By S.S. Dara 3. Applied Chemistry (Latest ed.) By H.D. Gesser Paper Code: ETME 107 L T C Paper: Manufacturing Processes 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. 8) Text Books: 1. Rajaraman, "Fundamentals of Computers", Prentice Hall of India, 3rd Edition. 15. Write a menu driven program for searching an sorting with following options- a) Searching (1) Linear searching (2) Binary searching b) Sorting (1) Intersection sort (2) Selection sort 16. Write a program to copy one file to other, use command line arguments. UNIT II Fuels: Classification, combustion (combination and chemical principles involved in it, calorific value: gross and net calorific values and their determination by bomb calorimeter and Boy's gas calorimeter. SCHEME OF EXAMINATION & DETAILED SYLLABUS for BACHELOR OF TECHNOLOGY (B.TECH) DEGREE GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY BACHELOR OF TECHNOLOGY (B.TECH.) DEGREE COURSE (Common to all branches) FIRST SEMESTER EXAMINATION Code No. Paper L T/P Credits Applied Mathematics - I 3 1 4 Applied Physics - I 2 1 3 Applied Chemistry - I 2 1 3 Manufacturing Process 2 0 2 Introduction to Computers and Auto CAD 2 1 3 Communication Skills - I 2 1 3 Impact of Science & Technology on Society 1 0 1 PRACTICAL/VIVA VOCE Applied Physics Lab. Text Books: 1. Engineering drawing by N.D.Bhatt (Charotar Publications). Concept of variables, program statements and function calls from the library (Print for example) C data types, int, char, float etc., C expressions, arithmetic operation, relational and logic operations, C assignment statements, extension of assignment of the operations. C primitive input output using getch and putchar, exposure to the scanf and printf functions, C Statements, conditional executing using if, else. Optionally switch and break statements may be mentioned. Delhi: Radha Publication, 1999. 3. Sudarsanam, R. 2. Kernighan & Ritchie, "C Programming Language", The (Ansi C Version), PHI, 2nd Edition. Resumes and CV's and Cover letters. 9. Write a recursive program for tower of Hanoi problem 10. The fibonacci sequence of numbers is 1, 1, 2, 3, 5, 8, ... 3. Engineering Drawing by P.S.Gill Paper Code: ETMA-102 L T C Paper: Applied Mathematics - II 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. Soil Pollution: Composition of soil, classification and effects of soil pollutants and their control. A. c) Create a Macro and use it in an application. UNIT 4 Pointers and Strings Pointers, relationship between arrays and pointers Argument passing using pointers Array of pointers. Passing arrays as arguments. Ultrasonics: Introduction, Production of Ultrasonics (Magnetostriktion and piezoelectric methods), engineering applications. [No. of Hrs. of water molecules of crystallization in Mohr's salt provided standard dichromate solution using internal indicator. B. Solid Waste Pollution: Classification, waste treatment & Disposal methods (Composting, sanitary landfilling, thermal processes, recycling and reuse). Shear force and bending Moment Diagram. [No. of Hrs. of solution of simultaneous differential equations. Unit III Projection of Solids: Simple cases when solid is placed in different positions, Axis faces and lines lying in the faces of the solid making given angles. Solid Fuels: Proximate and ultimate analysis of coal and their concepts of promoters, inhibitors and poisoning, physiosorption, chemisorption, surface area. The Phase Rule: Definitions of various terms, Gibb's Phase rule, Application of phase rule to one component system - the water system and Sulphur system. 3. Use Microsoft Power-Point to perform the following a) Create a slide show on any subject of your choice using minimum five slides. Numericals based on above topics. 5. To determine the no. Optical Instruments : Ramsdon & Huygen Eye pieces, Electron microscope. Comprehension of Unseen Passages [No. of Hrs: 10] Text: The following prose pieces from Best Science Writing : Reading and Insights edited by Robert Gannon prescribed text (Hyderabad: University Press (India) Limited, 1991). 8) Text Books: 1. A. Introduction to World Processing, Spread Sheet & Presentation software e.g. MS-Word, MS-Excel, MS-Power Point. CADD Unit-IV Isometric Projection Nomography : Basic Concepts and use. Strings and C string library, and Romanov, D. Paper Code: ETME 158 P C Paper: Engineering Mechanics Lab 3 2 Paper Code: ETEC 160 P C Paper: Electrical Science Lab 2 1 12 Two component system : Lead - Silver, FeCl3 - water. Na2SO4 - water. [No. of Hrs: 08] UNIT IV Polymers and Composites: Functionality, Degree of polymerization, concept of molecular weight (number average, weight average & numerical based on them), Linear, branched and cross-linked polymers, Tacticity of polymers, Homo and Copolymers (Classification based on repeat unit), Structure - property relationship of polymers. UNIT I CALCULUS OF SEVERAL VARIABLES: Partial differentiation, ordinary derivatives of first and second order in terms of partial derivatives, Euler's theorem on homogeneous functions, change of variables, Taylor's theorem of two variables and its application to approximate errors. Alternating series, Leibnitz test, Absolute and conditional convergence. [No. of Hrs. Basics of Formal Reports, Shames (PHI publications). Soldering: Dip soldering. 7) UNIT III Measuring Instruments Principles, Construction and application of moving coil, moving iron, dynamometer type, induction type instruments, extension of range of ammeter, voltmeter (shunt and multiplier), Two-wattmeter method, for the measurement of power, Cathod-ray Oscilloscope and Applications. Binary arithmetic, Floating-point arithmetic, signed and unsigned numbers. [No. of Hrs: 08] Unit IV Group Discussion: Use of persuasive strategies including some rhetorical devices for emphasizing (for instance: being polite and firm; handling questions and taking in criticism of self; turn-taking strategies and effective intervention; use of body language). 8) UNIT II Programming using C The emphasis should be more on programming techniques rather than the language itself. The C Programming language is being chosen mainly because of the availability of the compilers, books and other reference materials. 12. Write a program that takes two operands and one operator from the user perform the operation and then print the answer 13. Write a program to print the following outputs: 1 2 2 2 2 3 3 3 3 3 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 4. Write functions to add, subtract, multiply and divide two complex numbers (x+iy) and (a+ib) Also write the main program. 8) Unit-IV Kinematics of Rigid Bodies: Concept of rigid body, type of rigid body motion, absolute motion, introduction to relative velocity, relative acceleration (Coriolis's component excluded) and instantaneous center of velocity, Velocity and acceleration polygons for four bar mechanism and single slider mechanism. Kinetics of Rigid Bodies: Equation of motion, translatory motion and fixed axis rotation, application of work energy principles to rigid bodies conservation of energy. 2. Engg Mechanics by U.C.Jindal (Galgotia Publications). "Modern Advanced Mathematics for Engineers", John Wiley and Sons, 2001. 6. Determine the amount of Cu in the copper ore solution provided hydro solution. 12) FUNCTIONS OF COMPLEX VARIABLES: Derivatives of complex functions, Analytic functions, Cauchy-Riemann equations, Harmonic Conjugates, Conformal mapping Standard mappings - linear, square, inverse and bilinear. Floor moulding - Making of bend pipe mould etc. Note: Any 8-10 experiments out of the list may be chosen. Maxima and Minima of two variables, Langranges method of undetermined multipliers and Jacobians. [No. of Hrs. Each question should be of 12.5 marks. Titration of strong acid/strong base conduct metrically. 8) UNIT II Polarization: Introduction, production of plane polarized light by different methods, Brewster and Malus Laws. 11. To determine plank's constant. 7) UNIT III Laser: Introduction, temporal and spatial coherence, principle of Laser, stimulated and spontaneous emission, Einstein's Coefficients, He-Ne Laser, Ruby Laser, Application of Lasers. Paper Code: ETPH - 103 L T C Paper: APPLIED PHYSICS - I 2 1 3 INSTRUCTIONS TO PAPER SETTERS: Engg Mechanics by Irving H. Euler's theorem, Logarithmic Functions, Circular, Hyperbolic Functions and their Inverses. Paper Code: ETCH - 154 P C Paper: Applied Chemistry Lab - II 2 1 List of Experiments Determine the heat of hydration of CuSO4.5H2O/FeSO4.7H2O. K., "Advanced Engineering Mathematics", Narosa, 2003 (2nd Ed.). Preparation of a Polymer. Memdham & R.C. Denney Applied Chemistry: Theory and Practice (Latest ed.), By O.P. Vermani & A.K. Narula Paper Code: ETCS 155 P C Paper: Introduction to AutoCAD, Office Automation and Web Design 3 2 List of Experiments 1. Send out invitation letter to several people using mail merge facility. UNIT I Introduction to Programming: Concept of algorithms, Flow Charts, Data Flow diagrams etc., Introduction to the Editing tools such as vi or MS-VC editors. Concepts of the finite storage, bits, bytes, kilo, mega and gigabytes. Concepts of character representation, Number Systems & Binary Arithmetic, and Iyengar, S. 2. Wylie, R., "Advanced Engineering Mathematics", McGraw-Hill, 1995. 8) UNIT IV Mechanics: Central and non-central forces, Inverse square force, SHM, Damped, undamped and forced Oscillations. (12) To determine the numerical aperture (NA) of an Optical Fibre. 5. Use AutoCAD to do the following: a) Use of Drawing & Editing Properties: Modify Object Properties and a know how of layers, colors and prototype drawing. Fibre Optics: Introduction, numerical aperture, step index and graded index fibres, attenuation & dispersion mechanism in optical fibers (Qualitative only), application of optical fibres, optical communication (block diagram only) (No. of Hrs. [No. of Hrs: 06] Unit III Technical Writing: (A) Scientific Attitude and Impersonal Style: Plain Statements, Definitions; Description and Explanations (of objects, instruments, Processes. Scientific Principles, etc.) Summarizing and abstracting; Expressing ideas within a restricted word limit; Paragraph Writing (Paragraph division, introduction and the conclusion, Variety in sentences and paragraphs) Interpretation and use of charts, graphs and tables in technical writing. Fitting Shop: Learning use of fitting hand tools, marking tools, marking gauge. 09) ORDINARY DIFFERENTIAL EQUATIONS: First order differential equations - exact and reducible to exact form. 8) UNIT III Introduction to Auto CAD Coordinate System, 2D drafting: lines, circles, arc, polygon, etc., Editing, 3D, Solid modelling, Rendering, Use of Auto CAD for engineering drawing practices. by Create tabular data in word and insert graph to represent data. [No. of Hrs. Text Books: Vogel's Textbook of Quantitative Chemical Analysis (Latest ed.), Revised by G.H. Jeffery, J. Rotating Machines Construction and working principles of dc motor and generator and its characteristics of DC machines. Construction and working principles of 9-Induction motor, Torque-speed characteristics, and Industrial applications. (Latest edition), - II - 2 1 Applied Chemistry Lab. Distributed Forces: Determination of center of gravity, center of mass and centroid by direct integration and by the method of composite bodies, mass moment of inertia and area moment of inertia by direct integration and composite bodies method, radius of gyration, parallel axis theorem, Pappus theorems, polar moment of inertia. (6) To determine the dispersive power of prism using spectrometer and mercury source. Paper Code: ETME 110 L T C Paper: Engineering Mechanics 2 1 3 INSTRUCTIONS TO PAPER SETTERS: MAXIMUM MARKS: 75 1. [No. of Hrs. Determine the surface tension of a liquid using drop weight method. 7) UNIT IV Transformers Construction and Working principles and phaser diagrams of Single-phase Transformer, Emf equation, Equivalent circuit, Regulation and efficiency, and Auto transformer. Examine Your English, Hyderabad: Orient Longman, 1980 2. Sharma, R.S. Technical Writing. 3. "Advanced Engineering Mathematics", Dr. A. [No. of Hrs: 08] Text Books: 1. Chemistry in Engineering & Technology (Vol I & II) (Latest ed.) By J.C. Kuriacose & J. Jaggi (Khanna publications) References books: 1. Mitin, V. 2. Wylie, R., "Advanced Engineering Mathematics", McGraw-Hill, 1995. Liquefaction of gases. UNIT 4 Sheet Metal Shop: Learning use of sheet-metal tools, Exercises: Making jobs out of GI sheet metal. Practical Composition. Note: Atleast 8 experiments must be carried out. (9) To determine the refractive index of a prism using spectrometer. Paper Code: ETEL-113 L T C Paper: Impact of Science & Technology on Society 1 0 1 *Non University Examination Scheme (NUES) There will not be any external examination of the university. V.; Polis, M. (11) To find the wavelength of He-Ne Laser using transmission diffraction grating. - 3 2 Electrical Science Lab. c) Dimensioning commands, styles, control scale factors, drawing set-up, grip editing objects, snaps, utility commands. 8) UNIT III Iterations and Subprograms: Concept of loops in C using for, while and do-while. Options: continue may be mentioned. Understanding Technical English. Diffraction : Fresnel Diffraction, Diffraction at a straight edge, Fraunhofer diffraction due to N slits, Diffraction pattern absent spectra, dispersive power of Grating, resolving power of prism and grating. [No. of Hrs. Hyderabad: University Press (India) Limited, 1991. Ghatak, "Optics" 2. N. Paper Code: ETCH - 153 P C List of Experiments 1. To determine the percentage composition of a mixture of Sodium hydroxide and Sodium Chloride. 4. To determine the Carbonate, Bicarbonate and Chloride contents in ligation water. 7. To determine the velocity of ultrasound waves using an ultrasonic spectrometer in a given liquid (Kerosene Oil) 8. To measure the frequency of a sine-wave voltage obtain from signal generator and to obtain lissajous pattern on the CRO screen by feeding two sine wave voltage from two signal generator. 2. Lewis, Hedwig.

