



GENIUS COACHING CENTRE

INDIA'S BEST INSTITUTE FOR LEET FOR DIPLOMA HOLDERS

SYLLABUS LEET

ALL OVER INDIA LEET :LATERAL ENTRANCE ENGINEERING TEST
UPTU LEET,HARYANA,PULEET,IPU,DTU,JELET,SIET LEET,MMMUT,JHARKAND,HPTU LEET,GBU
LEET SYLLBUS COVERED IN GCC DURING COACHING

BASIC SCIENCE

(MECHANICS+MATHS +PHYSICS +CHEMISTRY +REASONING)

BRANCHWISE

(ELECTRONICS ENGG+MECHANICAL ENGG+ELECTRICAL ENGG.+COMPUTER GENERAL)

Lateral Entry to Engineering degree program [B.Tech]

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BASIC SCIENCE SECTION 1

MECHANICS FOR DIPLOMA HOLDERS (ALL OVER INDIA LEET COVERED)

1.Introduction

Concept of mechanics and Applied machines – its Importance and necessity, giving suitable example on bodies at rest and in motion.

2.Laws of Forces

Force and its effects, Units and measurement of force. Characteristics of force vector Representation, Bow's notation ,Types of forces, action and reaction, tension, thrust & Shear Force.

3. Force systems

Coplanar and space force systems. Coplanar, concurrent and non-concurrent force. Free body diagrams. Resultant and components of force, concept of equilibrium, parallelogram law of force. Equilibrium of forces, super-position and transmissibility of forces, method of resolution into orthogonal components, Polygon law, Lami's theorem, Static analysis of simple structures; Method of joints and method of sections.

4.Moments

Concepts of moment, Varignon's theorem-statement only. Principle of moments-application of moments to simple mechanism. Parallel force like and unlike parallel forces, concept of couple, Types of joints, Beams, Loadings and Reactions.

5.Laws of Motion

Position Time graph, Concept of momentum ,Newton's laws of motion, derivation of force equation from second law of motion, numerical problems on second law of motion ,piles ,lifts, momentum, impulse and impulsive force, Universal Law of gravitation.

6.Friction

Concept of friction, laws of friction, limiting friction coefficient of friction, sliding friction and rolling friction , inclined plane,Screw Jack.

7. Projectile Motion

Projectile motion comprises of two parts – horizontal motion of no acceleration and vertical motion of constant acceleration due to gravity.Projectile motion is in the form of a parabola, $y = ax + bx^2$.

8.Centre of Gravity

Concept of gravity, centroid and Centre of gravity. center of gravity for regular solids. Position of center of gravity of compound bodies and centroid of composite area. CG of bodies and areas with portions removed.

9.Moment of Inertia of Plane Areas

Concept of Moment of Inertia and second moment of area and Radius of gyration, theorems of parallel and perpendicular axes, second moment of area of common geometrical section: rectangle, triangle, circle. Second moment of area for L, T and I sections. Section modulus.

10. Simple Lifting Machines

Concept of machine , mechanical advantage, velocity ratio and efficiency of machine, their relationship. Law of machine , simple machines (lever, wheel and axle, pulleys, jack)

MATHEMATICS FOR DIPLOMA HOLDER (ALL OVER INDIA LEET COVERED)

1. ALGEBRA

1.1 Determinant and Matrix

(i) Definition Evaluation of a determinant of order two and three. Minor and cofactors. Properties of determinants.

(ii) Concept of a matrix, definition, Transpose of matrix, Symmetric and Skew symmetric matrix, Diagonal matrix, solving simultaneous equations by matrix methods.

(iii) Rank of matrix.

(iv) Eigen value and Eigen vector

(v) Inverse of a matrix.

1.2 Progression

(i) Arithmetic Progression (A.P.) – its nth term, sum to n terms. Geometric Progression (G.P.), (H.P) Harmonic Progression.–Its nth term, sum to n terms and infinite, Geometric series. Relations b/w A.P , G.P & H.P.

1.3 Binomial Theorem

(i) Binomial theorem for positive integral index (without proof), Binomial theorem for any Index, Expansions.

1.4 Quadratic Equation

(i) Quadratic Equation, equations reducible to quadratic form, relation b/w roots and coefficients.

1.5 Complex numbers

1.6 Permutation & Combination

1.7 Probability

2. Vector Algebra

2.1 Concept of vector, Position vector by a point. Addition and subtraction of vectors.

2.2 Multiplication of a vector by a scalar product and vector product of two vectors.

3. Coordinate Geometry

3.1 Straight Line

Equation of straight line in various standard forms. Intersection of two straight lines and Angle between them. Concurrent lines, perpendicular distance formula.

3.2 The Circle

General equation of a circle and its characteristics. Equation of a circle given center and Radius, three point form and diametrical form.

3.3 Conic Section (Parabola, Hyperbola, Ellipse)

(i) Definition of a conic section, standard equation of a parabola equation of parabola given its focus and directrix. Given the equation of parabola finding its focus axis, vertex Directrix and latus section.

(ii) Ellipse and Hyperbola (standard equation, without derivation) determining the equation of ellipse and hyperbola given the Directrix, focus and eccentricity. Given the equation of the ellipse and hyperbola finding the foci, Directrix's, Axes, Latus rectum, vertex and eccentricity.

4. Trigonometry

4.1 Trigonometric Ratio & Identities

Sum and difference formulas for trigonometric ratios of angles and their application (Without proof). Formula from product to sum, difference and vice-versa. Ratio of Multiple angles, sub multiple angles (like $2A, 3A, A/2$).

4.2 Trigonometrical Equation

4.3 P.O.T & S.O.T

In a triangle sine formulas, cosine formulas, Napier's analogy. Solution of triangle.

4.4 Height & Distances

Simple problems on height and distance.

4.5 Inverse trigonometry

5. Integral Calculus

- (i) Indefinite Integrals
- (ii) Integration as inverse process of differentiation
- (iii) Integration by substitution, by parts and by partial fractions
- (iv) Integration of rational and irrational quadratic expressions viz
- (v) Definite Integrals
 - 5.1 Evaluation of Definite Integrals
 - 5.2 Simple problems of Integration

$$\int \sin^n x \, dx, \quad \int \cos x \, dx$$

$$\int \sin x \cos x \, dx \text{ (without proof)}$$

6. Differential Calculus

6.1 Limit Function Continuity

Limits: Concept of a function, its value and limit, Evaluation of limits, four standard limits only, namely

$$\begin{aligned} \text{Limit}_{x \rightarrow 0} \frac{\sin x}{x}, & \quad \text{Limit}_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \\ \text{Limit}_{x \rightarrow 0} \frac{(1+x)^x}{x}, & \quad \text{Limit}_{x \rightarrow a} \frac{a^x - 1}{x}. \end{aligned}$$

6.2 Differentiation:

- i) Definition, its physical meaning as rate measure and its geometrical meaning.
- ii) Differentiation from first principles of $x^n, a^x, \log^x \sin x, \cos x, \tan x$ only.
- iii) Differentiation of $\cot x, \sec x$ and of inverse t-ratios.
- iv) Differentiation of sum, product and quotient of functions.
- v) Differentiation of function of a function.
- vi) Differentiation of implicit functions and parametric equations. Logarithmic differentiation.
- vii) Tangents & Normal
- viii) Increasing & decreasing functions
- ix) Maxima & Minima

7. Partial Differentiation

- (i) First order and second order partial derivatives of function of two variables.
- (ii) Euler's theorem on partial differentiation of homogenous functions, Total differentiation.

8. Solution For Ordinary

Differential Equations

Order and degree of a differential equation, A solving first order degree equation-variable separable from, Homogenous form and linear differential equation.

APPLIED CHEMISTRY FOR DIPLOMA HOLDERS (ALL OVER INDIA LEET COVERED)

1. Structure of Atom (4 hrs)

Basic Concept of chemistry, oxidation State, mole concept, type of concentration, Empirical formula, Rutherford model of the structure of atom, Bohr's theory of H atom and equation deduced. Quantum numbers and their significance, De-Broglie equation and uncertainty principle. Electronic configuration of 1 to 30 elements.

2. Periodic Properties of Elements (3 hr)

Periodic law, Periodic table, Periodicity in properties like atomic radii and volume, ionic radii, ionization energy and electron affinity. Division of elements into S.P.D. and F block.

3. Chemical Bonding (4 hrs)

Electrovalent, covalent and coordinate bond and their properties, Metallic bonding (electron cloud model) and properties (like texture, conductance, lustre, ductility and malleability). Orbital concept of covalence, hybridization (simple treatment).

4. Fuel and their Classification (2hrs)

Definition characteristics, classification, into solid, liquid and gaseous fuel, Petroleum and brief idea of its refining into various fraction and their characteristics and uses.

5. Water (2hrs)

Impurities in water, method of their removal, hardness of water, its types, causes and removal, disadvantage of hard water in boilers

pH value and its determination by calorimetric method.

6. Chemical Equilibrium Law (3 hrs)

Chemical Equilibrium Law of mass action, equilibrium constant expression, relation between K_p & K_c . Calculation of Equilibrium, Le Chatelier's principle.

7. Metals (2 hrs)

Cast iron and properties, effect of Sulphur, silicon and phosphorous as impurities in iron. Elementary Knowledge of heat treatment of steels-hardening, tempering, annealing, normalizing and case hardening.

8. Alloys (1 hrs)

Definition, Classification and necessity for making alloys. Composition, Properties and uses of following alloys: Brass, Bronze, Gun-metal and Duralumin. Effect of carbon, Nickel, Chromium, manganese on steel.

9. Corrosion (1 hrs)

Its meaning, theory of corrosion, prevention of corrosion by various using metallic and nonmetallic coatings.

10. Acids and Bases (2 hrs)

Various concepts of acids and bases (Arrhenius concept, Bronsted Lowry, Lewis concept) calculation of pH value.

11. Plastics and Polymers (1 hrs)

Plastics-Thermo-Plastic and thermo setting, Introduction of Polythene, P.V.C. Nylon, synthetic rubber and phenol-formaldehyde resin. Their application in industry.

12. Electrochemistry (2 hrs)

Electrochemical cell, salt bridge, applications of electrochemical cell, standard hydrogen electrode, conductivity, calculation of emf.

13. Chemical Kinetics (2 hrs)

Rate of reaction, Rate constant, Rate law, order of reaction, catalysis, activation energy, enzyme catalysis.

APPLIED PHYSICS FOR DIPLOMA HOLDERS (ALL OVER INDIA LEET COVERED)

1. Measurement (Units and Dimensions)

1.1 Fundamental and Derived Units:

S.I. Units. Dimensions of Physical quantities. Dimensional formula and Dimensional equation. Principle of homogeneity of dimensions and applications of homogeneity principle in:

- (i) Checking the correctness of physical equation,
- (ii) Deriving relations among various physical quantities, and
- (iii) Conversion of numerical values of physical quantities from one system of units into others,
- (iv) Limitations of dimensional analysis.

2. Circular Motion/WPE

Circular motion, Concept of work, power and energy, different forms of energy. Mass Energy relation angular velocity, angular acceleration

and centripetal force. Conservation of angular momentum, Satellite motion in an orbit: Kepler's Laws, escape velocity.

3. Simple Harmonic Motion

Periodic motion, characteristics of simple harmonic motion, equation of S.H.M. and determination of velocity and acceleration. Graphical representation. Simple pendulum. Derivation of their periodic time. Energy consideration in S.H.M. definition of free, forced, damped and resonant vibration.

4. Heat

4.1 Heat And Temperature

Concept of heat and temperature on the basis of kinetic theory. Units of heat. Basic principles of measurement of temperature..

4.2 Heat Transfer

Modes of heat transfer, coefficient of thermal conductivity. Radiation of energy. Absorptivity and emissivity. Black body.

5. Properties of Materials

5.1 Elasticity

Elasticity, stress and strain, Hook's law, elastic limit, Yielding point and breaking point. Modulus of elasticity, Young's modulus, bulk modulus and modulus of rigidity.

5.2 Surface Tension

Introduction, Cohesive and Adhesive forces, Molecular theory of surface tension. Angle of contact. Application of surface tension.

5.3 Viscosity

Fluid motion, streamline and turbulent motion, viscous forces, co-efficient of viscosity by Stoke's method and Poiseuille's method.

5.4 SOUND:

Wave motion, Concept of longitudinal and transverse waves; Definition of period, frequency, wave length, amplitude and phase; Speed of sound wave; wave propagation in a medium; Doppler effect. Properties of sound waves, Reflection, Refraction and Superposition of waves, stationary waves, beats, Vibration of Strings and Air columns, concept of resonance; Echo, Reverberation.

5.5 LIGHT:

Explanation of light wave, wave front, ray, velocity of light. Laws of reflection, reflection in different types of mirrors (plane, spherical, cylindrical, parabolic) with their geometrical drawing. Definition of image, focal length, radius of curvature, magnification with formula, numerical examples and application. Laws of refraction, refractive index, total internal reflection, concave and convex lenses and image formation through them, Elementary ideas of electromagnetic waves. Wave nature of light. Young's double slit experiment and Fringe width. Single slit diffraction, polarisation.

6. Atomic Structure (Covered in Chemistry)

General (Basic concept) physics, Atomic structure, Bohr's theory, energy level diagram, excitation, ionization, de-excitation and radiation. Quantum numbers n, l, m, s . Pauli's principle Bonds in molecules and solids.

REASONING FOR DIPLOMA HOLDERS (ALL OVER IPU/DTU LEET COVERED)

Verbal Reasoning (32 hours)

- 1) Analogy – 2 hours
- 2) Classification – 1 hour
- 3) Alphabet Test – 1 hour
- 4) Word Formation – 0.5 hour
- 5) Coding Decoding – 2 hours
- 6) Series Completion – 2 hours
- 7) Logical Order of Words – 0.5 hour
- 8) Inserting the Missing Character – 2
- 9) Number, Ranking and Time Sequence test – 3 hours
- 10) Blood Relations – 2 hours
- 11) Mathematical Operations – 0.5 hr
- 12) Direction Sense test – 1.5 hour
- 13) Clock and Calendar – 4 hours
- 14) Problems based on Ages – 1 hour
- 15) Sitting Arrangement – 1 hour
- 16) Puzzle Test – 2 hours
- 17) Mathematical Reasoning (Quant part) – 6 hours

Analytical Reasoning (7 hours)

- 1) Logical Venn Diagrams – 1 hour
- 2) Syllogism – 2 hours
- 3) Statement and assumption – 1 hour
- 4) Statement and conclusions – 1 hour
- 5) Statement and arguments – 1 hour
- 6) Data sufficiency – 0.5 hour
- 7) Input output (Sequence order tracing) – 0.5 hour

Non-verbal Reasoning (10 hours)

- 1) Analogy – 1 hour
- 2) Classification – 0.5 hour
- 3) Series – 1 hour
- 4) Mirror Image – 0.5 hour
- 5) Water image – 0.5 hour
- 6) paper folding and cutting – 1 hour
- 7) Grouping of identical Figures – 0.5
- 8) Formation of figures – 0.5 hour
- 9) Counting of figures – 2 hours
- 10) Embedded Figures – 0.5 hour
- 11) Cube and Dice – 2 hours

BRANCHWISE SECTION 2

(Specially Covered For All
LEET(UPTU,MMMUT,
SLIET,PULEET,HARYANA,CUSAT)

1) ECE FOR DIPLOMA HOLDER (ALL OVER INDIA LEET COVER)

BASIC ELECTRONICS

1.SEMICONDUCTOR PHYSICS

Energy band formation. Band structure of conductors insulators and semiconductors. Intrinsic and extrinsic semiconductors, effect of temperature.

2. SEMICONDUCTOR DIODE: PN-Junction, Junction Theory, V-I characteristics of a PN-Junction Diode, Ideal Diode, Use of Diode in Rectifiers: Half Wave Rectifiers, Full Wave Rectifiers, Zener Diode, Varacter Diode, Light Emitting Diodes.

3. BIPOLAR JUNCTION TRANSISTOR:

Introduction, Junction Transistor Structure, Operation, Transistor amplifying action, CB, CC and CE Configuration, characteristics, application of transistor as an amplifier.

4. FIELD EFFECT TRANSISTOR: Introduction, Types of FET's, JFET's, MOSFET's, CMOS, characteristics, working, applications.

5. OPERATIONAL AMPLIFIERS: Block Diagram, Characteristics of an ideal OP-AMP, Application of OP-AMP as an Inverting amplifier, Phase Shifter, Scale Changer, Non-inverting amplifier, Adder or Summing amplifier, differential or difference amplifier, integrator.

6. OSCILLATORS, FEEDBACK:

Types of feedback, Block Diagram of feedback circuit used as an oscillator, Barkhausen criterion, types of oscillators.

7.DIGITAL ELECTRONICS

Digital Electronics, Number System, conversion from one to another system, Binary Arithmetic,

Codes conversion & Parity; Logic gates; Boolean algebra, Half and full adder, half & full Subtractor, Concept of Mux, DeMux, decoder and encoder, Concept of flip-flops, RS, D, JK and T types, triggered and clocked, master slave JK, Shift/Storage Registers, concept of synchronous and asynchronous counters. ADC, DAC & its types

8. COMMUNICATION SYSTEM

Basic Concepts, block diagram Communication System, Modulation, Need for modulation, introduction to AM, FM, PM. Types of modulation, demodulation of AM, FM, PCM, DM, ASK, FSK, PSK.

9. POWER ELECTRONICS

Industrial Electronics and Control, SCR, DIAC, TRIAC.

10. ELECTRONICS INSTRUMENTS AND MEASUREMENTS

Measurements & Instrumentation, Errors, standards, accuracy precision resolution, Ammeters, voltmeters, wattmeters and energy meters, insulation tester, earth tester, multimeter, CRO, measurement of V, I, phase & Frequency on CRO, low, medium & high resistance measurement, AC Bridges, Transducers for measurement of temperature, displacement.

ELECTRICAL ENGG. FOR DIPLOMA HOLDER (ALL OVER INDIA LEET)

1. BASIS OF ELECTRIC AND MAGNETIC CIRCUIT COMPONENTS – 4 hours

Concept of Source and Load, Difference between DC and AC, Concept of voltage, current, resistor, capacitor, inductor, resistance, capacitance, inductance power and energy, star delta transformations, relation between electrical, mechanical and thermal units, temperature weft of resistance, electric field, emf, permittivity, Introduction to magnetic circuit, magneto motive force and magnetic field strength, permeability of free space, relative permeability, reluctance, comparison of electric and magnetic circuits, B/H curve, magnetic circuits calculations, self and mutual inductance.

2. BASIS OF MAGNETS – 1 hour

permanent magnets, temporary magnets, electromagnets, types of magnetic materials.

3. SOURCES FUNDAMENTAL AND CONVERSION – 1 hour

AC source, DC source, dependent & independent source, current & voltage source, source conversion from current to voltage source.

4. DC CIRCUIT FUNDAMENTALS AND ANALYSIS – 6 hours

Ohm's Law, Series and Parallel DC circuits, Kirchoff's Laws, loop, mesh and nodal analysis

5. NETWORK THEORMS – 4 hours

(Thevenin's, Superposition, Norton, Maximum power transfer theorem, Reciprocity and Tellegen's theorems

6. A.C. CIRCUIT FUNDAMENTALS AND RLC CIRCUIT ANALYSIS – 4 hours

Alternating emf, Amplitude, Cycle, Time period, Frequency, Phase, Phase Angle, Phase Difference, Instantaneous value, RMS value, Average value, peak to peak value, Power & Power factor, peak factor, form factor, RL, RC & RLC circuits, RLC resonant circuits, power measurement, Phasor diagram representation of AC values, AC through pure resistance, inductance and capacitance, AC through RL, RC and RLC circuits, Impedance Triangle and Power Triangle.

7. AC MACHINES – 6 hours

(Brief discussion of principle of operation of single phase transformer, emf equation, losses, efficiency and condition for maximum efficiency, voltage regulation, open circuit and short circuit tests of single phase transformer, operation of three phase transformer, star delta 3 phase

transformer connections and correspondingly outputs)

(AC motor, AC generator, Induction motor single phase & three phase, 3 phase squirrel cage and slip ring induction motors, equivalent circuit.)

8. DC MACHINES – 4 hours

(DC machine and its main parts, DC generators: Principle of operation and emf equation. DC motors: Principle of operation, classification, torque equation and applied voltage V-back emf E_b relation. Starters used for DC motors, Use of different types of DC generators and motors)

9. BASIS OF ELECTRICAL INSTRUMENTS – 2 hours

(voltmeter, ammeter, galvanometer, PMMC, PMMI, ohmmeter, megger, multimeter, transducer, CRO, DSO, Function generator)

10. BASIS OF POWER GENERATION, DISTRIBUTION & TRANSMISSION – 3 hours

(brief idea of power generation, transmission and distribution using block diagram of each stage involved thoroughly, some technical concepts of transmission through network theory)

11. BASIS OF HOUSE WIRING, VOLTAGE STABILIZER & UPS SYSTEMS – 2 hours

(role of fuse, MCB, fault testing, home appliances and inverter connection, Cleat wiring, casing and capping wiring, batton wiring, conduit wiring and PVC wiring, controlling of lamps from two of three places. Schematic diagram of service connection. Testing and connection of domestic wiring installation, Wiring faults and rectification, Installation of plate and pipe earthing, Procedure for measurement of earth resistance)

12. BASIS OF ELECTRICAL ENERGY MEASUREMENTS – 1 hour

(single phase and three phase electricity meter)

13. BASIS OF SOME ELECTRICAL BRIDGES – AC & DC – 1 hour

(Wheatstone bridge, Maxwell's Bridge, De-Sauty's Bridge, Owen's Bridge, Kelvin's Double Bridge, Hay's Bridge)

MECHANICAL ENGG. FOR DIPLOMA HOLDER (ALL OVER INDIA LEET)

1. APPLIED MECHANICS

Applied Mechanics, Friction, laws of friction, friction applications, centroid of a plane area, simple machines, screw jack, wheel & axles, system of pulleys, projectile, work, power, energy.

2. STRENGTH OF MATERIALS(SOM)

Strength of materials, Stress, Strain, Hooks law, stress-strain diagram, factor of safety, temperature stresses, composite section, Relation between elastic constants, Resilience, Principal stresses, B.M. & S.F. diagram for simply supported and cantilevers, beams, columns.

3. THERMODYNAMICS

Thermodynamics, First law of thermodynamics, second law of thermodynamics, zeroth law, steam properties, thermodynamic processes like isobaric, isochoric, isothermal, and reversible adiabatic, Diesel cycle, otto cycle. Modes of Heat Transfer (Conduction, Convection, Radiation).

4. FLUID MECHANICS

Fluid Mechanics, Properties of fluid, Viscosity, Newtonian and Non-Newtonian fluids, concept of atmospheric pressure, gauge pressure, Buoyancy, Bernoulli's Theorem, Types of Fluid flows, Dimension less numbers, Measurement of fluid flow by the pilot tube, Venturimeter, Darcy equation.

5. THEORY OF MACHINES (TOM)

Kinematics and kinetics; mechanisms and structure; inversions; kinematic chains; different types of mechanisms; degree of freedom & its determination; Grashof's criteria; velocity analysis; acceleration analysis; gear

trains; balancing of rotating masses; brakes & dynamometer.

6. PRODUCTION ENGINEERING/ MANUFACTURING PROCESSES

6.1 WORKSHOP TECHNOLOGY

Workshop Technology, Lathe- operations, turning machining Time, cutting speed, feed, Depth of cut, Drilling, Type of drilling machines, Drilling operation, Drilling time, Milling, up milling, down milling, milling operations, milling cutters, milling time, Shaper & Planer Working Principle, Measuring Instruments and Gauges, Vernier Caliper, Micrometer, Sine Bar, Plug gauges, snap gauges, ring gauges welding, Soldering, Brazing.

6.2 MATERIAL SCIENCE

Engg. Materials Classification, Structure (BCC, FCC) Mechanical properties, hardness testing methods, heat treatment, hardening annealing, tempering, carburizing, Normalizing.

6.3 ENGINEERING GRAPHICS & DRAWING

Engineering Graphics & Drawing, First angle and third angle projection methods, orthographic views, Isometric views, conventions for lines and materials, Projections of lines and solids

6.3.1 QUALITY CONTROL, CONTROL CHARTS:

acceptance sampling, TQM. Plant location, layout and line balancing. Types of plant layouts. Inventory control, Inventory classification, and EOQ and ABC analysis. Industrial management, types of organizational structure, qualities & responsibilities of good leader, methods of quality control, productivity.

COMPUTER FOR DIPLOMA HOLDER (ALL OVER INDIA LEET)

ELEMENTS OF COMPUTER ENGINEERING

1. FUNDAMENTALS OF COMPUTERS

Fundamentals of Computers, Organization of Digital Computers, Data Processing, High Level Languages, Translators, Compilers, Interpreters, algorithms, Flow Charting, Instructions, assembly language Programming.

2. COMPUTER ORGANISATION

Computer Organization, Overview of registers, bus organized computers, instruction set, Instruction execution, Hard-wired and micro programmed control units, Processor

3. MEMORY ORGANISATION

Organization. Memory Organization : Cache and virtual memory, I/O organization.

4. OPERATING SYSTEMS

Operating Systems, Overview of Operating Systems, Basic functions, concept of process, scheduling, memory management, critical section, synchronization, monitors.

5. PROGRAMMING IN C

Programming in C, Steps in Program development, flowcharting, algorithm, C Language: Data types, Console I/O program control statements, arrays, structures, unions functions, pointers, enumerated data types and type statement, File handling, C standard library and header files

6. COMPUTER NETWORKING

Basic of Computer networking, LAN, WAN, Internet & Application.

7. DIGITAL ELECTRONICS

Digital Electronics, Number System, conversion from one to another system, Binary Arithmetic, codes Gray, BCD, Binary, Excess-3 codes, codes conversion & parity; Logic gates; Boolean Algebra, Combinational ckt, Sequential ckt-Flip-Flop, counter, Register

8. Microprocessor 8085

History, Microprocessor block diagram, 8085 pin diagram, 8085 Microprocessor Interrupts, addressing mode, microprocessor and microcontroller difference