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Syllabus for Civil Engineering

Engineering Mechanics- Force (resolution of force, moment of force, force system, composition of forces), Equilibrium, Friction, Centroid and Center of gravity, Simple machines. 2 Building Construction- Building components (substructure, superstructure), type of structure (load bearing, framed and composite structures). 3 Building materials- Masonry materials (stones, bricks, and mortars), Timber and miscellaneous materials (glass, plastic, fiber, aluminum steel, galvanized iron, bitumen, PVC, CPVC, and PPF). 4 Construction of substructure- job layout, earthwork, foundation (types, dewatering, coffer dams, bearing capacity). 5 Construction of superstructure- stone masonry, brick masonry, Hollow concrete block masonry, composite masonry, cavity wall, doors and windows, vertical communication (stairs, lifts, escalators), scaffolding and shoring. 6 Building finishes- Floors (finishes, process of laying), walls (plastering, pointing, painting) and roofs (roofing materials including RCC). 7 Building maintenance- Cracks (causes, type, repairs- grouting, guniting, epoxy etc.), settlement (causes and remedial measures), and re-baring techniques. 8 Building drawing- Conventions (type of lines, symbols), planning of building (principles of planning for residential and public buildings, rules and byelaws), drawings (plan, elevation, section, site plan, location plan, foundation plan, working drawing), perspective drawing. 9 Concrete Technology- Properties of various types/grades of cement, properties of coarse and fine aggregates, properties of concrete (water cement ratio, properties of fresh and hardened concrete), Concrete mix design, testing of concrete, quality control of concrete (batching, formwork, transportation, placing, compaction, curing, waterproofing), extreme weather concreting and chemical admixtures, properties of special concrete (ready mix, RCC, pre-stressed, fiber reinforced, precast, high performance). 10 Surveying- Types of survey, chain and cross staff survey (principle, ranging, triangulation, chaining, errors, finding area), compass survey (principle, bearing of line, prismatic compass, traversing, local attraction, calculation of bearings, angles and local attraction) leveling (dumpy level, recording in level book, temporary adjustment, methods of reduction of levels, classification of leveling, tilting level, auto level, sources of errors, precautions and difficulties in leveling), contouring (contour interval, characteristics, method of locating, interpolation, establishing grade contours, uses of contour maps), area and volume measurements, plane table survey (principles, setting, method), theodolite survey

(components, adjustments, measurements, traversing), Tacheometric survey, curves (types, setting out), advanced survey equipment, aerial survey and remote sensing. 11 Computer Aided Design- CAD Software (AutoCAD, Auto Civil, 3D Max etc.), CAD commands, generation of plan, elevation, section, site plan, area statement, 3D view. 12 Geo Technical Engineering- Application of Geo Technical Engineering in design of foundation, pavement, earth retaining structures, earthen dams etc., physical properties of soil, permeability of soil and seepage analysis, shear strength of soil, bearing capacity of soil, compaction and stabilization of soil, site investigation and sub soil exploration. 13 Hydraulics- properties of fluid, hydrostatic pressure, measurement of liquid pressure in pipes, fundamentals of fluid flow, flow of liquid through pipes, flow through open channel, flow measuring devices, hydraulic machines. 14 Irrigation Engineering- Hydrology, investigation and reservoir planning, percolation tanks, diversion head works. 15 Mechanics of Structures- Stress and strain, shear force and bending moment, moment of inertia, stresses in beams, analysis of trusses, strain energy. 16 Theory of structures- Direct and bending stresses, slope and deflection, fixed beam, continuous beam, moment distribution method, columns. 17 Design of Concrete Structures- Working Stress method, Limit State method, analysis and design of singly reinforced and doubly reinforced sections, shear, bond and development length, analysis and design of T Beam, slab, axially loaded column and footings. 18 Design of Steel Structures- Types of sections, grades of steel, strength characteristics, IS Code, Connections, Design of tension and compression members, steel roof truss, beams, column bases. 19 Transportation Engineering- Railway Engineering (alignment and gauges, permanent way, railway track geometrics, branching of tracks, stations and yards, track maintenance), Bridge engineering (site selection, investigation, component parts of bridge, permanent and temporary bridges, inspection and maintenance), Tunnel engineering (classification, shape and sizes, tunnel investigation and surveying, method of tunneling in various strata, precautions, equipment, explosives, lining and ventilation). 20 Highway Engineering- Road Engineering, investigation for road project, geometric design of highways, construction of road pavements and materials, traffic engineering, hill roads, drainage of roads, maintenance and repair of roads. 21 Environmental Engineering- Environmental pollution and control, public water supply, domestic sewage, solid waste management, environmental sanitation, and plumbing. 22 Advanced Construction Techniques and Equipment- Fibers and plastics, artificial timber, advanced

concreting methods (under water concreting, ready mix concrete, tremix concreting, special concretes), formwork, pre-fabricated construction, soil reinforcing techniques, hoisting and conveying equipment, earth moving machinery (exaction and compaction equipment), concrete mixers, stone crushers, pile driving equipment, working of hot mix bitumen plant, bitumen paver, floor polishing machines. 23 Estimating and Costing- Types of estimates (approximate, detailed), mode of measurements and rate analysis. 24 Contracts and Accounts- Types of engineering contracts, Tender and tender documents, payment, specifications.

Syllabus for Electrical Engineering

Basic concepts: Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units. 2. Circuit law: Kirchhoff's law, Simple Circuit solution using network theorems. 3. Magnetic Circuit: Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configuration e.g. straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction. 4. AC Fundamentals: Instantaneous, peak, R.M.S. and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of R.L. and C, Resonance, Tank Circuit. Poly Phase system – star and delta connection, 3 phase power, DC and sinusoidal response of R-Land R-C circuit. 5. Measurement and measuring instruments: Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter method of 3 phase power measurement. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving oil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges. Use of CRO, Signal Generator, CT, PT and their uses. Earth Fault detection. 6. Electrical Machines: (a) D.C. Machine – Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of 1 phase /3 phase transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed

control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics, Fractional Kilowatt Motors and Single Phase Induction Motors: Characteristics and applications. 7. Synchronous Machines: Generation of 3-phase e.m.f. armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power. Starting and applications of synchronous motors. 8. Generation, Transmission and Distribution: Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults. Switchgears and Protection: Rating of circuit breakers, Principles of arc extinction by oil and air, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution 9. Estimation and costing: Estimation of lighting scheme, electric installation of machines and relevant IE rules. Earthing practices and IE Rules. 10. Utilization of Electrical Energy: Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors. 11. Basic Electronics: Working of various electronic devices e.g. P N Junction diodes, Transistors (NPN and PNP type), BJT and JFET. Simple circuits using these devices.

Syllabus for Electronics Engineering

1. Electronic Components & Materials Conductors, Semi conductor& Insulators; Magnetic materials; Jointing & Cleaning materials for U/G copper cable & OFC; Cells and Batteries (chargeable and non chargeable); Relays, Switches, MCB & Connectors. 2. Electronic Devices and circuits PN Junction diodes, thyristor; Diode and triode circuits; Junction Transistors; Amplifiers; Oscillator; M u l t i v i b r a t o r , counters; Rectifiers; Inverter and UPS. 3. Digital Electronics Number System & Binary codes; Boolean Algebra & Logic gates; Combinational & Sequential logic circuits; A/D & D/A converter, counters; Memories 4. Linear Integrated Circuit Introduction to operational Amplifier; Linear applications; Non Linear applications; Voltage regulators; Timers; Phase lock loop. 5. Microprocessor and Microcontroller Introduction to microprocessor, 8085 microprocessor working; Assembly Language programming; Peripherals & other microprocessors; Microcontrollers 6. Electronic Measurements Measuring systems; Basic principles of measurement; Range

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Extension methods; Cathode ray oscilloscope, LCD, LED panel; Transducers 7. Communication Engineering Introduction to communication; Modulation techniques; Multiplexing Techniques; Wave Propagation, Transmission line characteristics, OFC; Fundamentals of Public Address systems, Electronic exchange, Radar, Cellular and Satellite Communication. 8. Data communication and Network Introduction to data communication; Hardware and interface; Introduction to Networks and Networking devices; Local Area Network and Wide area network; Internet working. 9. Computer Programming Programming concepts; Fundamentals of 'C' and C ++; Operators in 'C' and C ++; Control Statements; Functions, Array String & Pointers, File Structure; Data Structure and DBMS 10 Basic Electrical Engg. DC Circuits; AC fundamentals; Magnetic, Thermal and Chemical effects of Electric current; Earthing - Installation, Maintenance, Testing

Syllabus for Mechanical Engineering

1. Engineering Mechanics : Resolution of forces, Equilibrium and Equilibrant, parallelogram law of forces, triangle law of forces, polygon law of forces and Lami's theorem, couple and moment of a couple, condition for equilibrium of rigid body subjected to number of coplanar non-concurrent forces, definition of static friction, dynamic friction, derivation of limiting angle of friction and angle of repose, resolution of forces considering friction when a body moves on horizontal plane and inclined plane, calculation of moment of inertia and radius of gyration of : (a) I-Section (b) channel section (c) T-Section (d) L-Section (Equal & unequal lengths) (e) Z-Section (f) Built up sections (simple cases only), Newton's laws of motion (without derivation), motion of projectile, D'Alembert's principle, definition law of conservation of energy, law of conservation of momentum. 2. Material Science : Mechanical properties of engineering materials – tensile strength, compressive strength, ductility, malleability, hardness, toughness, brittleness, impact strength, fatigue, creep resistance. Classification of steels, mild steel and alloy steels. Importance of heat treatment. Heat treatment processes – annealing, normalizing, hardening, tempering, carburizing, nitriding and cyaniding. 3. Strength of Materials : Stress, strain, stress strain diagram, factor of safety, thermal stresses, strain energy, proof resilience and modules of resilience. Shear force and bending moment diagram – cant leaver beam, simply supported beam, continuous beam, fixed beam. Torsion in shafts and springs, thin cylinder shells. 4. Machining : Working principle of lathe. Types of lathes – Engine lathe – construction details and

specifications. Nomenclature of single point cutting tool, geometry, tool signature, functions of tool angles. General and special operations – (Turning, facing, taper turning thread cutting, knurling, forming, drilling, boring, reaming, key way cutting), cutting fluids, coolants and lubricants. Introduction to shaper, slotter, plainer, broaching, milling and manufacture of gears, heat treatment process applied to gears. 5. Welding : Welding – Introduction, classification of welding processes, advantages and limitations of welding, principles of arc welding, arc welding equipment, choice of electrodes for different metals, principle of gas (oxy-acetylene) welding, equipment of gas welding, welding procedures (arc & gas), soldering and brazing techniques, types and applications of solders and fluxes, various flame cutting processes, advantages and limitations of flame cutting, defects in welding, testing and inspection modern welding methods, (submerged, CO2, atomic – hydrogen, ultrasonic welding), brief description of MIG & TIG welding. 6. Grinding & Finishing Process : Principles of metal removal by grinding, abrasives, natural and artificial, bonds and binding processes, vitrified, silicate, shellac rubber, grinding machines, classification: cylindrical, surface, tool & cutter grinding machine, construction details, relative merits, principles of centreless grinding, advantages & limitations of centreless grinding work, holding devices, wheel maintenance, balancing of wheels, coolants used, finishing by grinding, honing, lapping, super finishing, electroplating, basic principles – plating metals, applications, hot dipping, galvanizing tin coating, parkerising, anodizing, metal spraying, wire process, powder process and applications, organic coatings, oil base paint, lacquer base enamels, bituminous paints, rubber base coating. 7. Metrology : Linear measurement – Slip gauges and dial indicators, angle measurements, bevel protractor, sine bar, angle slip gauges, comparators (a) mechanical (b) electrical (c) optical (d) pneumatic. Measurement of surface roughness; methods of measurements by comparison, tracer instruments and by interferometry, collimators, measuring microscope, interferometer, inspection of machine parts using the concepts of shadow projection and profile projection. 8. Fluid Mechanics & Hydraulic Machinery : Properties of fluid, density, specific weight, specific gravity, viscosity, surface tension, compressibility capillarity, Pascal's law, measurement of pressures, concept of buoyancy. Concept of Reynold's number, pressure, potential and kinetic energy of liquids, total energy, laws of conservation, mass, energy and momentum, velocity of liquids and discharge, Bernoulli's equation and assumptions, venturimeters, pitottube, current meters. Working principle &

constructional details of centrifugal pump, efficiencies – manometric efficiency, volumetric efficiency, mechanical efficiency and overall efficiency, cavitation and its effect, working principle of jet & submersible pumps with line diagrams. 9. Industrial Management : Job analysis, motivation, different theories, satisfaction, performance reward systems, production, planning and control, relation with other departments, routing, scheduling, dispatching, PERT and CPM, simple problems. Materials in industry, inventory control model, ABC Analysis, Safety stock, re-order, level, economic ordering quantity, break even analysis, stores layout, stores equipment, stores records, purchasing procedures, purchase records, Bin card, Cardex, Material handling, Manual lifting, hoist, cranes, conveyors, trucks, fork trucks. 10. Thermal Engineering : Laws of thermo dynamics, conversion of heat into work vice versa , laws of perfect gases, thermo dynamic processes – isochoric, isobaric, isothermal hyperbolic, isentropic, polytrophic and throttling, modes of heat transfer, thermal conductivity, convective heat transfer coefficient, Stefan Boltzman law by radiation and overall heat transfer coefficient. Air standards cycles – Carnot cycle, Otto cycle, Diesel cycle, construction and working of internal combustion engines, comparison of diesel engine and petrol engine. Systems of internal combustion engine, performance of internal combustion engines. Air compressors their cycles refrigeration cycles, principle of a refrigeration plant.

Syllabus for Computer Science and Information Technology

1. PC Software : MS-Windows, MS-Word, MS-Excel & MS-Power Point 2. Computer fundamentals : Evolution of Computers, Hardware & Software, Internet. 3. C Language : Structure, Loop, Control Statements, Arrays, Pointers, Functions, Structure and Union, Files 4. Computer Organisation : Number Systems, Logic Gates, Flip-Flops, Boolean Algebra, DMA, Instruction Sets. 5. Information Systems : Information concepts, Hardware & Software, Overview of Communication Systems, E-Commerce 6. Data Structure using C++ : Object oriented Programming, Data Structures, Stack, Queue, Pointers, Linked List, Searching & Sorting Algorithms 7. DBMS fundamentals : BASIC, Data Models, RDBMS, Relational Algebra, SQL, DDL, DML and DCL Statements, Creating Tables, Equi-Joints, Self Joins, PL/SQL, Functions, Cursor and Triggers. 8. System Programming : Back-ground, Assemblers, Loaders and Linkers, Macro Processors, Compilers 9. Operating System using LINUX : Operating System, Types, Features & Basic Architecture of Unix/Linux System, Unix File System & Structure, Linux Commands for files and directories, Filters and

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Pipes, Process, Creating and Editing Files with VI Editor, System Administration, Role of System Administrator, Managing User Accounts. 10. Web Technologies and Programming : Internet & Intranet, Hardware & Software like Bus, Ethernet, LAN, Routers, Gateways, Bridge, Switches, Subnet etc. Internet Service Provider, Backbones, NAPs, URL, Domain Names, Email, Web Server and Proxy Server, Web Caches, Web Browser like Internet Explorer, Internet Viruses, Internet Security Issues, Firewall, Data Encryption, Digital Signatures and Certificates, Creating the Website and Home Page, HTML Programming Basics, Syntax and Rules, Search and Search Engine for Internet, Outlook Express and Front Page. 11. System Analysis and Design: System components; system planning: Fact finding techniques: Tools for documenting procedure and decisions; Structured Analysis: Data flow analysis; flow diagrams; Data dictionary; Application Prototype: System Design: software development specification; Design - Input, output, files, control. Procedure, Program specification etc: Design of computer output & its presentation. 12. Data and Network Communication: Data Communication - Distributed processing network criteria, protocol and standards. Topologies etc. OSI model, layers. TPC/IP protocol. Digital to Digital Conversion, Digital to analog Conversion, Digital data transmission. Standards, Modems, Cable Modem. Transmission media Guided & Unguided Media, Performance, Wave length; Multiplexing, DSL. Error detection and correction, VRC, LRC, CRC, Ethernet, Token Bus, Token Ring. 13. Java Programming: JAVA and Internet: Support systems and environment; JVM: Data Type: program structure. Constants & Variables, Type Casting; Operators, Class, Creating Objects, Class Members, Constructors, Overloading, Inheritance, Arrays. Creating Threads: Threads Class; Thread Methods; Thread Priority; Synchronization. Applets: Executable Applet, Adding Applet to HTML, File; passing Parameters to Applets. 14. Software Engineering: Software Process - life cycle models; system engineering: Software Requirements - Functional and non-functional; prototyping; verification; validation. Design Concepts and Principles - design heuristic; architectural design; user interface design; system design; SCM process. Software testing - types of test; testing strategies; integration and validation testing system testing and debugging. Software Project Management - Measures and measurements; cost estimation; Task Network; Error Tracking; CASE tools.

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Syllabus for Metallurgical Engineering

Thermodynamics and Rate Processes: Laws of thermodynamics, activity, equilibrium constant, applications to metallurgical systems, solutions, phase equilibria, Ellingham and phase stability diagrams, thermodynamics of surfaces, interfaces and defects, adsorption and segregation; basic kinetic laws, order of reactions, rate constants and rate limiting steps; principles of electro chemistry- single electrode potential, electro-chemical cells and polarizations, aqueous corrosion and protection of metals, oxidation and high temperature corrosion – characterization and control; heat transfer – conduction, convection and heat transfer coefficient relations, radiation, mass transfer – diffusion and Fick's laws, mass transfer coefficients; momentum transfer – concepts of viscosity, shell balances, Bernoulli's equation, friction factors. Extractive Metallurgy: Minerals of economic importance, comminution techniques, size classification, Flotation, gravity and other methods of mineral processing; agglomeration, pyrohydro- and electro-metallurgical processes; material and energy balances; principles and processes for the extraction of non-ferrous metals – aluminium, copper, zinc, lead, magnesium, nickel, titanium and other rare metals; iron and steel making – principles, role structure and properties of slags, metallurgical coke, blast furnace, direct reduction processes, primary and secondary steel making, ladle metallurgy operations including deoxidation, desulphurization, sulphide shape control, inert gas rinsing and vacuum reactors; secondary refining processes including AOD, VAD, VOD, VAR and ESR; ingot and continuous casting; stainless steel making, furnaces and refractories. Physical Metallurgy: Crystal structure and bonding characteristics of metals, alloys, ceramics and polymers, structure of surfaces and interfaces, nano-crystalline and amorphous structures; solid solutions; solidification; phase transformation and binary phase diagrams; principles of heat treatment of steels, cast iron and aluminum alloys; surface treatments; recovery, recrystallization and grain growth; industrially important ferrous and non-ferrous alloys; elements of X-ray and electron diffraction; principles of scanning and transmission electron microscopy; industrial ceramics, polymers and composites; electronic basis of thermal, optical, electrical and magnetic properties of materials; electronic and opto-electronic materials. Mechanical Metallurgy: Elasticity, yield criteria and plasticity; defects in crystals; elements of dislocation theory – types of dislocations,

slip and twinning, source and multiplication of dislocations, stress fields around dislocations, partial dislocations, dislocation interactions and reactions; strengthening mechanisms; tensile, fatigue and creep behaviour; super-plasticity; fracture – Griffith theory, basic concepts of linear elastic and elasto-plastic fracture mechanics, ductile to brittle transition, fracture toughness; failure analysis; mechanical testing – tension, compression, torsion, hardness, impact, creep, fatigue, fracture toughness and formability. Manufacturing Processes: Metal casting – patterns and moulds including mould design involving feeding, gating and risering, melting, casting practices in sand casting, permanent mould casting, investment casting and shell moulding, casting defects and repair; hot, warm and cold working of metals, Metal forming – fundamentals of metal forming processes of rolling, forging, extrusion, wire drawing and sheet metal forming, defects in forming; Metal joining – soldering, brazing and welding, common welding processes of shielded metal arc welding, gas metal arc welding, gas tungsten arc welding and submerged arc welding; welding metallurgy, problems associated with welding of steels and aluminium alloys, defects in welded joints; powder metallurgy; NDT using dye-penetrant, ultrasonic, radiography, eddy current, acoustic emission and magnetic particle methods.

Syllabus for Marketing Aptitude (MBA)

MARKETING MANAGEMENT

Introduction to marketing; concepts, marketing environment; segmentation, targeting & positioning, marketing mix (4Ps, 7Ps, etc.), Marketing Research, PLC, New product development process, pricing, pricing methods, promotion basics, promotion methods & strategies, Demand forecasting.

PRODUCT MANAGEMENT

Product Life Cycle, levels of a product, product mix, product portfolio decisions, BCG matrix, and its applications, Product planning, new product development process, Innovation and Creativity, product testing, product placement & commercialization.

SALES

Personal Selling, selling processes, types of the sales organization, Sales forecasting, sales strategies, sales force incentive plans, sales promotion, and its

objectives, sales monitoring, sales reporting, motivating the sales force, Advertising, PR.

RETAIL MARKETING

Retail marketing and retail management, strategic retail marketing, retail marketing mix, CRM and retail marketing, CBB & retail marketing , Retail location, retail store operations, retail organizations & structure, SCM , Retail pricing and promotional pricing, retail branding strategies, store & non-store brands, merchandising and warehousing, global retailing, modern trade and new trends in retailing.

SERVICES MARKETING

Services, nature, service product & pricing, service positioning, CRM and services, CBB and services marketing, promoting & services , MIS, service processes, service distribution, employees (people) and services marketing, Customer relationship management (CRM), internet marketing, Social Media Optimisation (SMO), Social Media Marketing (SMM) and Search Engine Optimization (SEO).

PRODUCT MANAGEMENT

Product Life Cycle, levels of a product, product mix, product portfolio decisions, BCG matrix, and its applications, Product planning, new product development process, Innovation and Creativity, product testing, product placement & commercialization.

BRAND MANAGEMENT

Introduction to brands and brand management, brand research and brand equity, branding for different product categories, branding & differentiation, brand image, brand element and brand association, Brand equity measurement, competitive analysis, brand positioning, brand hierarchies, CBBE (Customer-based brand equity), Branding & IMC, branding and marketing mix, branding and product mix, brand attributes, branding and segmentation,brand strategies, brand image and awareness, brand equity systems, brand value, brand extensions.

CONSUMER BUYING BEHAVIOUR & INTEGRATED MARKETING COMMUNICATIONS

consumer personality & brand personality, buying influences, buying process, factors influencing buying decisions, models of buying behavior, post-purchase behavior. Marketing research, methods, data collection techniques, sources of secondary data for marketing decisions, IMC definition, elements, IMC and brand communication process, role of advertising in branding process BTL, OOH, etc., promotions in IMC – consumer, trade sales, co-branding, in-branding, etc., packaging and labeling in IMC, PR.Consumer Protection in India: List of Consumer Rights.Consumer Protection Act,1986.

ADVANCED MARKETING TECHNIQUES

Global marketing, Strategic Marketing Process, value chain, value creation. Nature & scope of rural markets, marketing to cooperatives, channels of distribution in rural India.Inbound marketing, reverse marketing, up-selling, down-selling and cross-selling techniques, CSR.

Syllabus for Human Resource (HR)

Human Resources Management (HRM)- Meaning, Nature and Scope, Difference between HRM and Personnel Management, HRM functions and objectives, Personnel Management functions, Structure of Personnel Department, Line and staff, Job Analysis, Manpower Planning, New Challenges, Recruitment and Selection, Placement and induction. Wage and Salary Administration, Job evaluation.

Human Resource Development- HRD concept, Importance, evolution, Functions, Organisation of HRD function. Performance Appraisal, Training & Development, Quality of work life, Quality circles.

Organizational Behaviour- Concept of Organisational Behaviour, Importance, Evaluation, Role, Group Dynamics, Motivation Leadership, Job Satisfaction, Morale, Fatigue & Monotony, Organisational Change.

Job Analysis – Job Description, Job Specification. The systematic approach to recruitment: recruitment policy, recruitment procedures, recruitment methods, and evaluation. The systematic approach to selection: the selection procedure, the design of application form, selection methods, the offer of employment, and evaluation of the process.

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Training and Development: Purpose, Methods, and issues of training and management development programmes. Training: Concept, Role, Need and Importance of Training, Types of Training, Understanding Process of Learning, Developing an Integrated Approach to Learning in Training Programme. Training Need Assessment.

Performance Appraisal: Definition, Purpose of appraisal, Procedures, and Techniques including 360-degree Performance Appraisal, Job Evaluation. Compensation Administration: Nature and Objectives of compensation, components of pay structure in India.

Discipline and Grievance Procedures: Definition, Disciplinary Procedure, Grievance Handling Procedure. Industrial Relations: Nature, importance, and approaches of Industrial Relations. Promotion, Transfer, and Separation: Promotion – purpose, principles, and types; Transfer – reason, principles and types; Separation – lay-off, resignation, dismissal, retrenchment, Voluntary Retirement Scheme.

Personality: Meaning & Concept, Personality Patterns, Symbols of Self, Moulding the Personality Pattern, Persistence & Change. Personality & Personal Effectiveness: Psychometric Theories – Cattle and Big Five, Psychodynamic Theories - Carl Jung and MBTI, Transactional Analysis, Johari – Window, Personal Effectiveness.

Overview of Industrial Relations: Concept of Industrial Relations; Nature of Industrial Relations; Objectives of IR; Evolution of IR in India, Workers participation in Management, employee discipline, Industrial Labour Organisation.

Trade Union Act :Trade union Act 1926,Industrial Employment Act 1946,Industrial Disputes Act 1947, Minimum wages Act 1948,Payment of wages Act 1936,Equal remuneration Act 1976,Payment of Bonus Act,1965, Technological Change in IR-Employment issues, Management Strategy, Trade Union Response, Human Resource Management and IR- Management Approaches, Integrative Approaches to HRM; International Dimensions of IR.

Labour Legislations: Industrial Dispute Act, Factories Act, Workmen's Compensation Act,1923. Important Provisions of Employees' State Insurance Act, Payment of Gratuity Act, Employees Provident Fund Act.Maternity Benefit Act 1961.

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Syllabus for Law Officer

Various Indian Laws and Acts with reading on the banking sector like contract acts; Laws related to partnerships; Laws related to companies; Laws related to firms etc. RBI functions; Relevant laws of negotiable instruments; Foreign Exchange; Securities; How to prevent money laundering; Bankers Book Evidence Act; Offenses and Penalties; Consumer Protection Act; Banking Ombudsman Scheme; RTI Act; DRT Act and Information Technology Act; The Banking Ombudsman Scheme; Procedure for Redressal of Grievance; Commercial Laws with Reference to Banking Operation; Contracts of Guarantee; Contracts of Bailment; Contracts of Pledge; Contracts of Agency; Meaning and Essentials of a Contract of Sale; Definition, Meaning, and Nature of Partnership.

Syllabus for Finance Officer

Financial System

Financial Markets

Risk Management

Basics of Derivatives

Development in Financial Sector

Union Budget

Inflation