

Syllabus For Professional Test

Post Code -01 Marketing and logistics Operation

- 1) Identify market segment, targeting and positioning: Market segmentation, pattern procedure, Evaluation of the market segment, Market targeting.
- 2) Formulating Marketing strategies- differentiation strategies, product life cycle strategies, new product development, developing competitive advantage.
- 3) Product and process design - The product development process, analyzing a process.
- 4) Overview of logistics – Introduction, nature, concepts evolution, strategic logistics planning process, components of logistics, functions of logistics mgmt.
- 5) Supply chain management – nature and concept, value chain, framework of supply chain, outsourcing and 3PL, 4pl, bullwhip effect.
- 6) Demand Management and customer service- Demand management, Traditional forecasting, collaborative planning, forecasting and replenishment, channels of distribution, order management.
- 7) Procurement and supply Chain Management – Introduction, Inbound logistics, materials management, electronic procurement, types of e-commerce models
- 8) Inventory control & management- inventory management, Inventory cost, managing inventory.
- 9) Warehouse Management System - Warehouse decision- the nature and importance of warehousing, role of warehouse in logistics system, material handling, packaging, bar coding, importance of packaging.
- 10) Transportation system management – role of transportation selection decision, modes of transport, intermodal transportation, documentation,- domestic.
- 11) Materials, Purchasing and stores Management.

Post Code -02 Executive IT

1. Data Base Management System (DBMS) : RDBMS ,Normalization ,Overview of SQL queries ,E- R Diagrams, Transaction Management ,Database Administration ,Back up & Replication ,Open source ,Propriety
2. Networking:- Types of Networking ,Interne, LAN ,WAN (Leased line/ MPLS), VPN (SSL & IPSEC)
3. IT Infrastructure Management: Tools for management of network, server, Storage etc., Tools for management of Firewall, router, IPS etc
4. Information Security: ISO 27001: Best Practices ,Information security of It infrastructure and application software
5. Network Security: Cyber Crimes, Risk Management, Firewall ,Cryptography
6. Software Engineering: Software development life Cycle (SDLC) ,Software Development
7. Web Technologies: HTML Tags, XML ,Network security
8. Fundamental of ERP & Mobility
9. Computer Organization + Hardware (Microprocessor)
10. Programming Language

Post Code -03 Finance & Accounts

1. Advanced Accounting:
 - Accounting standard and guidance: Guidance Notes on various accounting aspects issued by the ICAI.
 - Cash and Fund Flow Statement.
 - Final Accounts
 - Company accounts and shares & Debentures.
2. Management Accounting and Financial Management:
 - Capital Budgeting, Long term Financing, Working Capital Management.
 - Memorandum of understanding and Financial Management & Control.
 - Dividend decision: dividend policy; its determinants.
 - Tools of Financial Analysis and planning; Ratio analysis to evaluate performance and financial health application of ratio analysis in financial decision making.
 - Goals of Financial Management, Key activities of Financial Management.
 - Relationship of finance to accounting and audit and organization of finance function.
3. Financial Statement: Balance sheet, Profit & Loss Accounts, Source and Usage of Final Statement etc.
4. Auditing: Techniques of Auditing planning and audit , Audit Programs, Audit process and various Audit Types, Audit of PSU companies, Audit Committees and corporate Governance, Cost Audit, Internal audit, Special audit procedures, witnessing physical verification of assets.
5. Cost Accounting: Cost Concept in decision making, relevant cost, differential cost, Incremental Cost and opportunity Cost, Standard Costing and variance analysis Budgetary Control; Flexible Budgets, Zero Based budgets, Management information system.
6. Direct Taxes Rates regarding TDS, Procedure for claiming TDS refund, AS-26 etc., Computation of tax liability, Deduction from gross total income and tax liability, Filling of TDS return, Advance payment of Tax, Penalty and prosecutions, Deferred Tax, Refund of excess payments etc.
7. Indirect Taxes: Service tax as per Finance Act 2003, Filling of Service tax return, Sales tax, Custom Duty, Excise Duty.

Post code -04 Executive (Civil)

- (1) Building Material

Timber: Different types and species of structural timber, density-moisture relationship, strength in different directions, defects, influence of defects on permissible stress, preservation, dry and wet rots, codal provisions for design, Plywood.

Bricks: Types, Indian Standard classification, absorption, saturation factor, strength in masonry, influence of mortar strength on masonry strength.

Cement: Compounds of, different types, setting times, strength.

Cement Mortar: Ingredients, proportions, water demand, mortars for plastering and masonry.

Concrete: Importance of W/C Ratio, strength, ingredients including admixtures, workability, testing for strength, elasticity, non-destructive testing, mix design methods.

(2) Design of steel Structures

Principles of working: stress method. Design of connections, simple members, Built-up sections and frames. Design of industrial roofs. Principles of ultimate load design, Design of simple members and frames.

(3) Design of Concrete and Masonry Structures

Limit state design for bending, shear, axial compression and combined forces. Code provisions for slabs, beams, walls and footings. Working stress method of design of R.C. members.

Principles of pre-stressed concrete design, materials, methods of pre-stressing, losses. Design of simple members and determinate structures. Introduction to pre-stressing of indeterminate structures.

Design of brick masonry as per I.S. Codes.

(4) Construction Practice, Planning and Management Concreting Equipment:

Weight Batcher, Mixer, vibrator, batching plant, and concrete pump. Cranes, hoists, lifting equipment. Earthwork equipment: Power shovel, hoe, dozer, dumper, trailers and tractor, rollers, sheep foot rollers, pumps. Construction, Planning and Management: Bar chart, linked bar chart, work-break down structures, Activity-on-arrow diagrams. Critical path, probabilistic activity durations; Event based networks. PERT network; Time-cost study, crashing; Resource allocation.

(5) Water Supply Engineering:

Sources of supply, yields, design of intakes and conductors; Estimation of demand; Water quality standards; Control of water-borne diseases; Primary and secondary treatment, detailing and maintenance of treatment units; Conveyance and distribution systems of treated water, leakages and control; Rural water supply; Institutional and industrial water supply.

(6) (A) Soil Mechanics:

Properties of soils, classification and inter-relationship; Compaction behavior, methods of compaction and their choice; Permeability and seepage, flow nets, Inverted filters; Compressibility and consolidation; Shearing resistance, stresses and failure; soil testing in laboratory and in-situation. Stress path and applications; Earth pressure theories, stress distribution in soil; soil exploration, samplers, load tests, penetration tests.

(b) Foundation Engineering:

Types of foundations, Selection criteria, bearing capacity, settlement, laboratory and field test; Types of piles and their design and layout. Foundations on expansive soils, swelling and its prevention, foundation on swelling soils.

(7) Surveying:

Classification of surveys, scales, accuracy; Measurement of distances-direct and indirect methods; optical and electronic devices; Measurement of directions, prismatic compass, local attraction; Theodolites-types; Measurement of elevations-Spirit and trigonometric leveling; Relief representation; Contours; Digital elevation modeling concept; Establishment of control by triangulations and traversing measurements and adjustment of observations, computation of coordinates; Field astronomy, Concept of global positioning system; Map preparation by plane tabling and by photogrammetry; Remote-sensing concepts, map substitutes.

Post Code -05 Executive (Electrical)

1. Electrical Materials: Band Theory , Conductors , semiconductors and insulators . Super-conductivity. Insulators for electrical and electronics applications Magnetic material. Ferro and ferri magnetism. Ceramics: properties and applications. Hall effect and its applications. Special semi-conductors.
2. Electrical Circuits: Circuit's elements. Kirchhoff's Laws. Mesh and nodal analysis. Network theorems and applications. Natural response and forced response. Transient response and steady state response for arbitrary inputs. Properties of networks in terms of poles and zeros. Transfer function . resonant circuits. Three-phase circuits. Two –port network. Elements of two element network synthesis.
3. Measurement and instrumentation: Units and standards. Error analysis, measurement of current. Voltage, power, power-factor and energy. Indicating instruments. Measurement of resistance, inductance, capacitance and frequency. Bridge measurements. Electronic measuring instruments. Digital voltmeter and frequency counter. Transducers and their applications to the measurement of non-electrical quantities like temperature, pressure, flow-rate displacement, acceleration, noise level etc. Data acquisition systems. A/D and D/A Converters.
4. Power systems: Types of Power Stations, Hydro, Thermal and Nuclear Stations, Pumped storage plants. Economics and operating factors.

Power transmission lines. Modeling and performance characteristics. Voltage control. Load flow studies. Optimal power system operation. Load frequency control. Symmetrical short circuit analysis. Z-Bus formulation. Symmetrical Components. Per Unit representation. Fault analysis. Transient and steady-state stability of power systems. Equal area criterion. Power system Transients. Power system Protection Circuit breakers. Relays. HVDC transmission.

5. Power Electronics: Power semi-conductor devices. Thyristor. Power transistor, GTOs and MOS-FETs. Characteristics and operation. AC to DC Converters; 1-phase and 3-phase DC to DC Converters; AC regulators. Thyristor controlled reactors, switched capacitor networks. Inverters; Single-phase and 3-phase. Pulse width modulation. Sinusoidal modulation with uniform sampling. Switched mode power supplies.

Post code -06 Executive (HR)

- 1) **Introduction of HRM:** Concept and Scope of HRM, Function, Global HRM
- 2) **Acquiring and Deploying Human Resources:** Job Analysis, Human Resource Planning, Recruitment and Selection, Placement, Induction & Orientation.
- 3) **Human Resource Development:** Performance Appraisal, Training, Management Development, Career Planning & Development, Transfer, Promotion, Retention and retrenchment Management, change and organization Development.
- 4) **Compensation:** Job evaluation, Wage and salary Administration, Incentive, Bonus, Fringe Benefits.
- 5) **Human Relations:** Motivation, Communication, Leadership style, Redressing employee grievances, Discipline, counseling, Group, perception.
- 6) **Industrial Relations & Labour Laws:** Industrial disputes Act-1947, Trade union Act-1926, Industrial Conflict, Collective Bargaining, Minimum wages Act -1948, payment of wages act-1936, The payment of bonus Act-1965, EPF act-1952, ESI act-1948, , Payment of Gratuity act-1972, etc,