

SYLLABUS

➤ **Senior Law Officer (Post Code 01) and Junior Law Officer (Post Code 09)**

Part-I

- Constitution of India,
- The Delhi Development Act, 1957 with the Rules and Regulations framed under the Act
- Transfer of Property Act, 1882
- Code of Civil Procedure, 1908 as amended up to date.
- Administrative Tribunal Act, 1985
- Arbitration and Conciliation Act, 1996
- Consumer Protection Act, 1986
- Contract, 1872
- Evidence Act, 1872
- Hindu Succession Act, 1956
- Indian Succession Act
- Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013
- Right to Information Act, 2005
- Registration Act, 1908
- Public Premises (Eviction of Unauthorized Occupants) Act, 1971
- Delhi Co-operative Societies Act, 2003 with Rules
- Delhi Apartment Ownership Act, 1986
- Industrial Dispute Act, 1947
- Limitation Act, 1963
- Competition Act, 2002
- Criminal Procedure Code 1973 as amended up to date
- The Real Estate (Regulation and Development) Act, 2016

Part-II To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and
- d) Test of English Language

➤ **Deputy Director (Planning) (Post Code 02) and Assistant Director (Planning) (Post Code 04)**

Part-I

(i) Basic concepts of urban planning and Architecture, Planning Legislation and GIS.

Section 1: Architecture

Elements, construction, architectural styles and examples of different periods of Indian and Western History of Architecture; Oriental, Vernacular and Traditional architecture; Architectural developments since Industrial Revolution; Influence of modern art on architecture; Art nouveau, Eclecticism,

International styles, Post Modernism, Deconstruction in architecture; Recent trends in Contemporary Architecture; Works of renowned national and international architects.

Section 2: Environmental Planning and Design

Ecosystem- natural and man-made ecosystems; Ecological principles Concepts of Environmental Impact Analysis; Environmental considerations in planning and design; database for incorporation of environmental concerns in planning analysis, land suitability analysis, thermal comfort, ventilation and air movement; Principles of lighting and illumination; Climate responsive design; Solar architecture; Principles of architectural acoustics; Green Building Concepts and Rating; ECBC; Building Performance Simulation and Evaluation; Environmental pollution- types, cause, controls and abatement strategies.

Section 3: Urban Planning and Housing

Urban Planning and Housing Planning process; Types of plans - Master Plan, City Development Plan, Structure Plan, Zonal Plan, Action Area Plan, Town Planning Scheme, Regional Plan; Salient concepts, theories and principles of urban planning; Sustainable urban development; Emerging concepts of cities - Eco-City, Smart City, Transit Oriented Development (TOD), SEZ, SRZ NIMZ, Corridor planning prevailing at national level i.e. WDFC, EDFC etc. Housing; Concepts, principles and examples of neighborhood; Housing typologies; Slums; Affordable Housing; Housing for special areas and needs; Residential densities; Standards for housing and community facilities; National Housing Policies, Programs and Schemes.

Section 4: Planning Techniques and Management

Tools and techniques of Surveys – Physical, Topographical, Land use and Socioeconomic Surveys; Methods of non-spatial and spatial data analysis; Graphic presentation of spatial data; Application of G.I.S and Remote Sensing techniques in urban and regional planning; Decision support system and Land Information System.

Urban Economics; Law of demand and supply of land and its use in planning; Social, Economical and environmental cost benefit analysis; Techniques of financial appraisal; Management of Infrastructure Projects; Development guidelines such as URDPFI..

Section 5: Services, Infrastructure and Transportation

Urban infrastructure- Transportation, Water Supply, Sewerage, Drainage, Solid Waste Management, Electricity and Communications,

Process and Principles of Transportation Planning and Traffic Engineering; Road capacity; Traffic survey method; Traffic flow characteristics; Traffic analyses and design considerations; Travel demand forecasting; Land use transportation – urban form inter-relationships; Design of roads, intersections/ grade separates and parking areas, Hierarchy of roads and level of service; Traffic and transport management and control in urban areas; Mass transportation planning; Para-transits and other modes of transportations Pedestrian and slow moving traffic planning; Intelligent Transportation Systems.

Section 6: Planning Legislation and GIS

Planning legislation will include acts and legislation related to development management and maintenance of Delhi and other towns of NCR, municipal corporation and local bodies, Land Acquisition Act, PPP etc. Local self- Governance.

- (ii) **Planning issues related to Delhi, NCR & initiatives of other metropolitan cities in India will include major problems and policy practices and innovative methodology and best practices.**
- (iii) **Delhi Development Act, (DD Act), 1957 will include all sections and provisions of the act.**

- (iv) Master plan of Delhi 1962-2021 will include provisions, strategies and master plan proposals as per documents published from time to time.
- (v) Unified building byelaws, 2016 will include all sections and chapters of building byelaws as approved and notified by Government of India from time to time.

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➤ **Deputy Director (Architect) (Post Code 03)**

Part-I

1. ARCHITECTURAL DESIGN

- Design of an institutional/ educational building.
- Design of a housing.
- Design of a commercial/cultural/recreational building (office/ institutional complex, shopping arcade etc.)
- Design of a service oriented building (large hotel, hospital etc.)

2. BUILDING CONSTRUCTION AND MATERIAL

- PVC as a material.
- PVC sections.
- PVC doors and windows/ aluminum doors and windows.
- Aluminum Cladding.
- Different cladding materials like aluco-bond etc.
- Complete working drawings of a project.
- Foundation plans.
- All floor plans.
- All elevations.
- Necessary sections.
- Joinery details.
- Kitchen details.
- Toilet details.
- Staircase details.
- Wardrobe details.
- Service layout.
- Modern Formwork techniques in steel, lift slab construction and slip form formwork and formwork of special profiles.
- Prefabrication using prestresses and post stressed RCC and post stressed RCC joints in prefabrication, construction details of typical RC wall in PreFeb mode.
- Expansion joints and construction joints.
- Water proofing constructions details and basement construction.
- Construction details of energy efficient buildings.
- Construction details including insulation, drainage materials and construction system of large span structures.

- Advance building material and their properties.
- Curtain walls and their detailing.
- Partition details and design, paneling design and details, staircase design and details.

3. URBAN DESIGN

- Urban design vocabulary.
- Elements of urban design.
- History of urban design.
- Urban spaces.
- Circulations: intercity/ intra-city urban.
- Visual surveys.
- Building typology and its impact on urban form.
- Physical and on physical determinants of city form patterns.
- Urban design tools.
- Principles and techniques of urban design, legislations related to urban design.

4. STRUCTURAL DESIGN

- Design of steel beams.
- Design of built-up girders.
- Design of steel columns, long and short, built-up.
- Column bases slabs, grillage, gusted.
- Steel joints.
- Theory and design of steel frames.
- Analyze of the structure of a previous design (preferably an appropriate part of the housing).
- Calculation of the structural component of the selected design.
- Preparing structural drawings for the selected design.
- Bulk active structures.
- Form active structures.
- Surface active structure.
- Vector active structure.

5. BUILDING SERVICES

- Terminology in acoustics.
- Behavior of sound.
- Acoustical defects and their solutions.
- Acoustics material.
- Principles of good acoustical design for different building types.
- Noise.
- Fire- fighting first resistant rating.
- Fire resisting materials.
- Fire protection equipment.
- NBC standard for firefighting.
- Human comforts conditions.
- Natural and mechanical ventilations.
- Air-conditioning principles, systems and methods.

- Architectural interventions in air-conditioned buildings, study of material (interior) for air conditioned spaces.
- Types and layout of centrally air-conditioning system.
- Lift location, systems, sizes equipment spatial requirement.
- Escalators location, equipment.

6. HISTORY OF ARCHITECTURE WESTERN

- Industrial revolution and its architectural implications.
- 19th century Neo classicism in Europe and America.
- Development of Architecture in Victorian England.
- Technology of iron and steel.
- Town planning trends in Europe.
- Rise of the idea of Expositions.
- Birth of the American Skyscraper
- Alternate trends in late 19th and early 20th century in Europe
- Early modernism.
- Post war decades: The international Styles.
- Alternatives of the international styles.
- Late modernism
- Sick Tech. Architecture.
- Post Modernism.
- Neo Modernism.

INDIA

- Post-independence Architecture.
- The arrival of modernism
- Rediscovering our Roots.
- Current trends in Indian Architecture.
- Exploring regionalism in Indian architecture.
- Culture of colonialism and British response to Indian context.
- Early British Architecture.
- Birth of Indo Saracenic Style.
- Classical Revival and building of New Delhi.
- Early India.
- Hinduism and evolution of the temple.
- Arrival of Muslims and urbanization.
- British Imperial Colonialism and India.
- A new capital for Punjab.
- Going back to roots.
- Indian vernaculars.
- Role of Vastushastra in contemporary Indian Architecture.
- Current trends in Indian Architecture.
- Architecture without Architects.

7. ESTIMATING AND COSTING

- Importance and estimating costing
- Costing and valuation, different types of estimates
- Thumb rules used in estimating
- Methods of preparing BQQ, long wall, short wall method
- Centre line method
- BQQ for journey works
- Quantity estimation for finished
- Principles of economics in building planning
- Price rise mechanism in tenders.
- Abstracts of cost of estimate of project
- Valuation forms of tenders in building civil works.
- Analysis of rates for various building works.

8. BUILDING BYE LAWS AND OFFICE MANAGEMENT

- (Building bye laws professional practice, office management, project management)
- Study of building bye laws and study of national building code.
- Study of building Bye Laws of Chandigarh and Delhi
- Submission drawings – study and requirements.
- Architect's Act 1972, Council of Architecture, norms and standards regarding fees and scale of charges.
- Architectural office administration
- Office correspondence filling and record keeping.
- Dealing with different personnel
- Legal responsibilities and ethics
- Architectural competitions
- Notice inviting tenders, tender documents agreement contract
- Professional practice: Negotiation arbitration, arbitrator its advantages/ disadvantages, billing, accounting.
- Project management.
- Site organizations and networking techniques
- Time analysis, CPM PERT
- Value engineering man power and labour laws.
- Basis accounts techniques and book keeping.

9. SPECIFICATION

- Writing specifications of
- Excavations
- Earthwork
- Foundations
- Damp proof courses
- Brick masonry
- Concreting
- Flooring
- Timber doors and windows
- Metal doors and windows

- Painting and other finishes
- Sanitary fittings and fixtures
- Electrical wiring and fixtures
- Specifications as part of the tender documents.

10. RESEARCH METHODOLOGY

- Research in architecture, construction technology and allied areas
- Scientific methods with special emphasis on architectural research
- Data collection, compiling and analysis
- Evaluation
- Report writing
- Presentation techniques and methodologies
- Introduction to architectural thesis
- Preparation of synopsis

11. PROFESSIONAL PRACTICE

- Study of office practices
- Office administration accounting building bye laws
- Tendering
- Contracts and arbitration
- Valuation
- Professional conduct and ethics
- Architects Act 1972
- Role of COA, IIA and UIA
- Implementing a building contract.

12. INTERIOR DESIGN

- History of interior design
- Theory of interior design
- Study of constrains affective interior designs
- Art in Interior Design
- Furniture and Furnishings
- Case studies
- Principles of aesthetic composition in interiors
- Interiors design in history
- Constrains of unction on different interiors
- Color in interior design
- Natural and artificial lighting in interiors
- Built in furniture
- Furnishing and paneling materials and types of movable furniture
- Interior design accessories and decorative elements
- Building material for interior finishes
- Electrical wiring and fixtures, material and methods.

13. HOUSING

- Definition and vocabulary
- Housing scenario in the context of the national and the state.
- Hosing surveys.

- National housing
- Housing sites and planning
- Architectural design of various types of housing.
- Ownership types, cooperatives
- Factors influencing land value.
- Housing finance
- Slums
- Housing construction technology
- Housing physical infrastructure
- Housing legislation.

14. GREEN ARCHITECTURE

- Ecological impact of buildings.
- Sustainable methods of construction
- LEED
- Green building Councils.
- Green features in buildings
- Greening the city

15. REGIONAL PLANNING

- Understanding of physical, social and economic parameters for regional planning.
- Relationship of Macro-Planning and Micro-Planning
- Relationship for regional planning with national level planning development of new towns/ cities.
- Redevelopments of new towns/ cities.
- Redevelopments and expansion of existing towns.
- Implementation of regional plans.
- Methods of making future projects.
- Over-lay methods of developing regional plans.

16. ARCHITECTURAL CONSERVATION

- Introduction, history of conservation, modern movement in architecture and its association with conservation movement in architecture and its association with conservation movement prominent debates associated with conservation, - SPAB and violet-Le-ducs contribution and approach towards.
- Various definitions: Heritage, culture, historicity, historic/ Historical building, monument, authenticity, historic site, building fabric, setting of a monument conservation, restoration, repair reconstruction maintenance, refurbishment, adaptive reuse architecture in conservation new buildings in historic settings. Abbreviation: ICC ROM, ICOMOS, SPAB, ASI, ITTACH.
- Values in conservation, ethics of conservation, degrees of intervention
- Charters for conservation of historic properties: chargers of Athens, Venice, Burra and Nara.
- Conservations in India, Role of agencies like the archeological survey of India (ASI) and the Indian National Trust for Art and Culture Heritage (INTACH) various laws and act associated with the conservation in India.
- Listing a historic site (building and its setting) documentation, equipment after recording; types of recording principle and procedure for recording ICOMDS guidelines for recording historic structures.

- Structural appraisal: Causes of decay and damage to structures, causes and interpretation of structural problems methods of recording structure defects.
- Causes of deterioration of historic buildings.
- Monitoring a historic structure, techniques of monitoring interpretation and preservation of observations.
- Approach to case and maintenance of historic building principles of repair.

17. BUILDING MAINTENANCE

- Maintenance defined. Need and importance of building maintenance its economic and social significance.
- Categories of maintenance.
- Planned maintenance: Preventive maintenance, running caretaker maintenance, PWD pattern of maintenance; A/R and S/R maintenance cycles. Maintenance profiles.
- Maintenance Generators
- Climatic conditions; usages: defects in original design/ construction changing standards and tastes
- Maintenance standards.
- Determinants of maintenance standards, Statutory standards. Building bye laws and Acts. Legislatives controls. Buildings and housing Acts. Directive Principles Act.
- Organizing Maintenance
- Managing maintenance. Financing and budgeting for maintenance Understanding technology and techniques involved in maintenance. Execution of maintenance work, Controlling costs.
- Information systems in maintenance.
- Inspections: annual periodical; special, Check- Lists pro-forma
- Creating Data-Base for maintenance
- Maintaining building registers; inventories; inspection reports records; user complaints. Building in danger.
- Understanding building defects and ailments.
- Examining symptoms of various types and patterns of building diseases and ailments; structural, non-structural; finishing's stains; services; leakage dampness; corrosion protection; sulphate attack on metal.
- Diagnosing and determining causes. Prescribing effective remedial action

18. ENERGY CONSCIOUS ARCHITECTURE

- Use of energy in buildings.
- Conserving energy
- Solar passive and solar active systems
- Wind energy
- Biomass energy
- Recycling of waste
- Intelligent building systems.

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➤ Assistant Director (Architect) (Post Code 05)

Part-I

1. ARCHITECTURAL DESIGN

- Design of small buildings like primary health clinic, Nursery school, neighborhood shopping incorporating services and basic elements of structural systems.
- Physical study of environment of a rural settlement, covering various aspects related to physical and civil infrastructure.
- Study of an urban area, covering various aspects related to physical and civil.
- Design of a community building related to the studies urban area.

2. ARCHITECTURAL DESIGN

- Historical scene in Europe, America and India after the Industrial revolution.
- Study of life, philosophy and weeks of Walter Gropius.
- Study of life, philosophy and weeks of Frank Lylo d wright.
- Study of life, philosophy and weeks of Mies Van Der Rohe.
- Study of life, philosophy and weeks of Lecorbusier.
- Study of life, philosophy and weeks of Louis Khan.
- Study of life, philosophy and weeks of Joseph Allein Stein.
- Study of life, philosophy and weeks of Charlies Correa.
- Study of life, philosophy and weeks of Achut. P. Kanvinde.
- Study of life, philosophy and weeks of B.V. Doshi.
- Study of life, philosophy and weeks of Raj Rewal.

3. BUILDING CONSTRUCTION AND MATERIAL

- RCC as a material.
- RCC staircase.
- Flowing and roofing details.
- Detailed section through a 4 stories building.
- Concept of frame structures.
- RCC frame structure with in-fills.
- RCC footing and foundations.
- Structural steel members and sections.
- Joining details of various steel members.
- Steel connection.
- Steel Foundations.
- Structural steel frames.
- Steel stair case.
- Steel mezzanine floor.
- Steel Sport system for roofing.
- Steel trusses.
- Steel Cladding.
- Collapsible and rolling shutters.

4. STRUCTURAL DESIGN

- Concept of RCC and introduction of IS: 456 working stress method of design for RCC structure.
- Theory of singly reinforced sections- neutral axis, under reinforced sections, over reinforced section and moment of resistance.

- Shear, Bond and development length.
- Analysis and design of singly reinforced rectangular RCC beam.
- Analysis and design of double reinforced rectangular RCC beam.
- Theory and design of one way RCC slab, two way RCC slab and Cantilever slabs.
- Theory and design of long and short span, rectangular and circular RCC columns.
- Theory and design of simply supported circular and ribbed slabs subjected to uniformly distributed loads.
- Bending moment diagrams for a fixed beam subjected to uniformly distributed load and point load.
- Theory and design of reinforced T-beams, inverted T-beams and isolated T-beams, singly reinforced L-beams.
- Theory and design of isolated slope column footing for a square, rectangular and circular column subjected for axial loads.
- Column footings to subjected to eccentric loading.
- RCC footing for axially loaded RCC and brick walls.

5. BUILDING SERVICES(CLIMATOLOGY)

- Traditional use of material and shelter design.
- Climate and its elements.
- Classifications of various climatic zones, and their characteristics.
- Human comfort design guidelines.
- Micro climate.
- Thermal comfort factors.
- Solar position, shadow angles shading devices.
- Architectural climatic control devices.
- Ventilation and air movement and their architectural implications.
- Climate design rule affecting settlement planning and architecture.

6. GRAPHICS

- Perspective drawing, its concept and various elements and methods.
- 2-point perspective drawing of simple forms with changes in different parameters.
- 2 Point perspective drawings of small structures with changes in different parameters.
- 1 Point perspective drawing of a simple situation.
- Shade and shadow of object in different shape at different levels and planes.
- Shade and shadow of architectural fenestrations.
- Shade and shadow of façade of simple building.
- Techniques for rendering drawings in color pencil, water color and
- Rendering of plan, sections and elevation in different mediums.
- Rendering of two points perspective of a building in different mediums
- Rendering of one-point perspective of an interior space in ink.

7. HISTORY OF ARCHITECTURE

Indian Subcontinent

- The coming of Islam to the region and its Architectural Implications.
- Architecture of the Sultans in Delhi Region
- Development of Architecture in the important provinces.
- Architecture of the early Rulers of the Mughal Dynasty.
- Shahjahan's contribution to Mughal Architecture.

Europe

- The birth of Renaissance in Florence
- 16th Century Renaissance in Italy.
- Renaissance and the Cult of Personality.
- Baroque and Rococo as Outlying Styles of Renaissance.
- Influence of Italian Renaissance on Architecture in England.

8. LANDSCAPE DESIGN

- Principles of landscape design.
- Elements of landscape design and their various manifestations.
- Plant material: Shrubs, trees, plants, ground cover.
- Water and its manifestations.
- Use of earth and stones as element of landscape.
- Site planning.
- Landscape design exercise for different architectural situations.
- Landscape and climatology.

9. BUILDING SERVICES (LIGHTING)

- Natural lighting.
- Artificial lighting.
- Requirement for different situations.
- Lamps and luminaries.
- Outdoor lighting.
- Specialized lighting like art galleries etc.
- Electrical system wires.
- Electricity distribution system with a building.
- Safety devices.
- Electrical wiring systems.
- Generation transmission and distribution of electricity.
- Graphic electrical symbols.
- Load calculation of a small building.

10. COMMUNICATION SKILLS

- Principles of communication.
- Office English.
- Interview skill, technical presentation.
- Report writing for publication.
- Spoken English (Oral Presentation)
- Meetings
- Annotative English.
- Creative English.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

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➤ **Assistant Director (System) (Post Code 06)**

Part-I

- Computer Architecture, Computer Organization. Data Communication And Net-Working, Artificial Intelligence, Micro-Processors, Number Systems & Digital Logics, Peripherals And Storage Devices.
- Operating Systems: Windows, Unix And Linux
- Programming: - Programming In Asp.Net, Java And Android/ Mobile Aps Programming, Programming In D2k, Programming In Visual Basic, PL/SQL, HTML.
- Cyber Security and compliances.
- Data Base Management (DBMS):- Oracle 8i And Above, SQL server 2003 and above, Open Sources DBMS Sybase Ingress etc.
- Internet and Web Technologies

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➤ **Assistant Director (Ministerial) (Post Code 07)**

(A) **General Intelligence & Reasoning:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, Visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non- verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & de-coding, 19 Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/pattern–folding & unfolding, Figural Pattern– folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification.

(B) **General Awareness:** Questions in this component will be aimed at testing the candidates general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining History, Culture, Geography, Economic Scene, General Policy & Scientific Research.

(C) **Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage. Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra, Triangle and

its various kinds of centers, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ratio, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart

(D)English Language & Comprehension: Questions in this components will be designed to test the candidate's understanding and knowledge of English Language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting misspelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, cloze passage & comprehension passage.

Questions will also ask from respective discipline required for job.

➤ **Assistant Accounts Officer (Post Code 08)**

Part-I: Based on advance knowledge of Academic field on following topics:

- a) Financial analysis of Balance Sheet and Income Statement
- b) Capital Budgeting decisions (Risk and Return analysis, Sensitivity analysis, Capital rationing, adjusted net Present value, Replacement decision, Impact of inflation on capital budgeting decision etc.)
- c) Rebate, Relief and refunds under provisions of Income Tax.

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➤ **Planning Assistant (Post Code 10)**

Part-I

i. Basic concepts of urban planning and Architecture, Planning Legislation and GIS.

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Elements, construction, architectural styles and examples of different periods of Indian and Western History of Architecture; Oriental, Vernacular and Traditional architecture; Architectural developments since Industrial Revolution; Influence of modern art on architecture; Art nouveau, Eclecticism, International styles, Post Modernism, Deconstruction in architecture; Recent trends in Contemporary Architecture; Works of renowned national and international architects.

Section 2: Environmental Planning and Design

Ecosystem- natural and man-made ecosystems; Ecological principles Concepts of Environmental Impact Analysis; Environmental considerations in planning and design; database for incorporation of environmental concerns in planning analysis, land suitability analysis, vulnerability analysis; Climate responsive design; Solar architecture; methods of addressing environmental quality; Green Building

Concepts and Rating; ECBC; Building Performance Simulation and Evaluation; Environmental pollution- types, cause, controls and abatement strategies.

Section 3: Services, Infrastructure and Transportation

Urban infrastructure- Transportation, Water Supply, Sewerage, Drainage, Solid Waste Management, Electricity and Communications, Process and Principles of Transportation Planning and Traffic Engineering; Road capacity; Traffic survey method; Traffic flow characteristics; Traffic analyses and design considerations; Travel demand forecasting; Land use transportation – urban from inter-relationships; Design of roads, intersections/ grade separates and parking areas, Hierarchy of roads and level of service; Traffic and transport management and control in urban areas; Mass transportation planning; Para-transits and other modes of transportations Pedestrian and slow moving traffic planning; Intelligent Transportation Systems.

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Planning legislation will include acts and legislation related to development management and maintenance of Delhi and other towns of NCR, municipal corporation and local bodies, Land Acquisition Act, PPP etc. Local self- Governance.

- ii. **Delhi Development Act, (DD Act), 1957 will include all sections and provisions of the Act.**
- iii. **Master plan of Delhi 1962-2021 will include provisions, strategies and Master Plan proposals as per documents published from time to time.**

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➤ Programmer (Post Code 11)

Part-I

- Computer Architecture, Computer Organization. Data Communication And Net-Working, Artificial Intelligence, Micro-Processors, Number Systems & Digital Logics, Peripherals And Storage Devices.
- Operating Systems: Windows, Unix And Linux
- Programming: - Programming In Asp.Net, Java And Android/ Mobile Aps Programming, Programming In D2k, Programming In Visual Basic, PL/SQL, HTML.
- Data Base Management (DBMS):- Oracle 8i And Above, SQL server 2003 and above, Open Sources DBMS Sybase Ingress etc.
- Internet and Web Technologies

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➤ Junior Engineer (Civil) (Post Code 12)

Part-I

Building Materials: Physical and Chemical properties, classification, standard tests, uses and manufacture/quarrying of materials e.g. building stones, silicate based materials, cement (Portland), Asbestos products, Timber and Wood based Products, laminates, bituminous materials, paints, varnishes.

Surveying: Principles of surveying, working of properties, compass and bearing, plane table surveying, theodolite traverse, adjustment of theodolite, levelling and contouring, curvature, refraction, permanent adjustment of dumpy level, methods of contouring and uses of a control map, tachometric survey.

Soil Mechanics: Origin of soil phase diagram, definitions of void ratio, porosity, degree of saturation, water content, specific gravity of soil grains and unit weights, grain size distribution curves for different soil and their uses. Atterberg's limits, ISI soil classification, plasticity chart, coefficient of permeability, effective stress, consolidation of soils. Calculation of shear strength of soils, direct shear test, vane shear test, triaxial test, soil compaction, Lab compaction, Lab compaction test, moisture content and bearing capacity of soils, plate load test, standard penetration test.

Hydraulics: Fluid properties, hydrostatics, measurements of flow, Bernoulli's theorem and its application, flow through pipes, flow in open channels, weirs, flumes, spillways, pumps and turbines.

Environmental Engineering: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage system, circular sewers, oval sewer, sewer appurtenances, surface water drainage, sewage treatments.

Structural Engineering: Theory of structures: Elasticity constants, type of beams, determinate and indeterminate, bending moment and shear force diagrams of simply supported, cantilever and over hanging beams. Moment of area and moment of inertia for rect. & circular section, bending moment and shear stress for tee, channel and compound sections, chimneys, dams and retaining walls, eccentric loads, slope deflection of simply supported and cantilever beams, critical load and columns, torsion of circular section.

Concrete Technology: Properties, Advantages and uses of concrete, cement aggregates quality, water cement ratio, workability, mix design, storage, batching, mixing, placement, compaction, finishing and curing of concrete, quality control of concrete, hot weather and cold weather concreting, repair and maintenance of concrete structure.

RCC Design:

RCC beams: flexural strength, shear strength, bond strength, design of single reinforced beams, lintels, cantilever beams, double reinforced beams, one way slabs, two way slabs, isolated footings, reinforced brick work. T-beams, columns, staircases, retaining walls, water tanks (RCC design questions may be based on both Limit State method and Working Stress method).

Steel Design: Steel design and construction of steel columns, beams, roof trusses, plate girders.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and

d) Test of English Language

➤ **Sectional Officer (Horticulture) (Post Code 13)**

Part-I

Candidates must have knowledge of – Horticulture, Styles of Gardening, Lawn Development, Roadside\plantation of trees/shrubs. Flowering shrubs, Hedges, Bonsai and its maintenance, Annual flowers, Topiary, Indoor and outdoor potted plants, Propagation of roses , Chrysanthemum, Dahlia, Bougainvillea, Hanging Basket, Cultivation of Cut flowers i.e. Roses, Gladiolus, Orchids, Tuberose, Liliium and Anthurium , Ground Covers, Medicinal Plants, Scented Shrubs/Trees, Propagation, Plant Protection, Nursery management, Routine Garden operations, Features of the garden, Flower shows and Garden Competitions, Floral ornaments and Flower Arrangements.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and
- d) Test of English Language

➤ **Architectural Assistant (Post Code 14)**

Part-I

1. BUILDING CONSTRUCTION AND MATERIALS

- Basis components of "building".
- Role of Construction in Architecture.
- Bricks as a building material.
- Brick Masonry tools.
- Brick walling and joints.
- Brick jallies.
- Brick Arches.
- Stones as a building material
- Stone masonry Tools.

2. STRUCTURAL DESIGN

- Forces in structures.
- Moments in structures.
- Loads in structures.
- IS:875
- Types of supports.
- Shear Force, Bending Moment.
- Center of Gravity, Moment of inertia.
- Forces in a simple wooden truss.
- Design of members of wooden truss.

3. ARCHITECTURAL GRAPHICS

- Acquaintance with the computer.
- Introduction to drafting equipment/computer.
- Drafting of lines, Orthographic projections, Representing simple solids, Lettering,
- Architectural Graphic Symbols, Drawing Scales, measured drawing of a simple object/

- Drawing, editing, modifying commands in 2-d using AutoCAD, Setting in plotting.
- Drawings on standard formats.

4. HISTORY OF ARCHITECTURE

Indian Subcontinent

- Indus valley civilization.
- Aryan/Vedic civilization.
- Buddhist and Jain civilization.
- Indian Aryan Temple Architecture.
- Early and late Chalukyan architecture.
- Dravidian Temple Architecture.

WESTERN WORLD

- Ancient civilization- Mesopotamian, Sumerian, Babylonian, Persian, Assyrian, Egyptian civilization.
- Classical Greek Architecture.
- Roman Architecture.
- Early Christian Architecture.
- Romanesque Architecture.
- Early Gothic Architecture.

5. ARCHITECTURAL DESIGN THEORY

- Meaning of design.
- Appreciation of beautiful objects.
- Design in everyday life.
- Logic in design.
- Elements of design- line, form, color texture.
- Principles of design – unity, variety, hierarchy.
- Scale and proportions.
- Balance, emphasis.
- Focus, fashion, decoration.
- Basic design and architectural design – Elemental Differentiation.
- Perception and experience.
- Tangible and intangible in architecture.
- Function, structure and form.
- Space, space usage and interrelationship of spaces.
- Circulation within Spatial Units.
- Horizontal Circulation.
- Vertical Circulation.
- Circulation and Spaces, between buildings.
- Relationship of plan, section and elevation.
- Architectural scale.
- Programming in Architectural design.

6. ARCHITECTURAL DESIGN

- Exercises in composing 3 dimensional objects and their representation in 2-D.
- Exercise in design of simple mono cellular buildings like guard house, flower kiosk, milk parlor etc.

7. STRUCTURAL DESIGN

- Timber as a structure material.
- Design of simple timber beams.
- Design of simple timber short and long columns.
- Design of simple trusses and their members.
- Brick as a structural material.
- Design of load bearing brick walls.
- Design of brick wall footings.

8. BUILDING SERVICES-II (SEWERAGE AND WATER SUPPLY)

- Sources of surface and ground water, treatment of water, transportation and distribution at town level.
- Water supply system: fittings, direct and indirect supply, layout and sizes of pipes, hot water supply, storage.
- Sewerage system: systems, fitting and fixtures, sizes and layout, sewage collection, sewage treatment and disposal at town level.
- Solid water management.
- Rain water drainage.

9. SURVEYING

- Definition and concepts: Instruments used; acquaintance with electronic surveying instruments.
- Principles of surveying, Unit of Measurements.
- Chain surveying.
- Compass Surveying.
- Leveling.
- Contouring: Topographic maps.
- Plain tabling.
- Marking foundations.
- Measuring building under construction.

10. ENVIRONMENTAL STUDIES

- The multidisciplinary nature of environmental studies, Definition, scope and importance.
- Natural Resources.
- Renewable and non-renewable resources.
- Natural resources and associated problems.
- Ecosystems.
- Biodiversity and its conservation.
- Environmental pollution.
- Social issues and the Environment.
- Human population and the Environment.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and
- d) Test of English Language

➤ Naib Tehsildar (Post Code 15)

Part-I

- a) History of India and National Movement.
- b) Indian and world Geography.
- c) Indian Polity and Governance- Constitution, Political System, Panchayati Raj.
- d) Indian Economic and Sustainable Development, Poverty, Inclusion, Demographics, Social Sector Initiatives.
- e) General Science (up to 10th level)
- f) Environmental Ecology, Bio-diversity Climate Change, Global Warming etc.
- g) Indian History.
- h) Indian Economy with particular reference to Planned Economy and Liberalization Policy.
- i) Indian Geography with particular reference to distribution of natural resources across the country.
- j) Salient features of Indian Society, Diversity of India.
- k) Current affairs of National and International importance.
- l) Indian Constitution, Political system, Panchayati Raj.
- m) Delhi Development Act, 1957.
- n) Delhi Land Revenue Act, 1974.
- o) Land reforms in India.
- p) National Capital Territory of Delhi Laws (Special Provisions) Act 2006.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and
- d) Test of English Language

➤ Assistant Section Officer (Post Code 16)

(A) **General Intelligence & Reasoning:** It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, space visualization, spatial orientation, problem solving, analysis, judgement, decision making, Visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non- verbal series, coding and decoding, statement conclusion, syllogistic reasoning etc. The topics are, Semantic Analogy, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, Coding & decoding, Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/pattern-folding & un-folding, Figural Pattern-folding and completion, Indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thinking, Emotional Intelligence, Social Intelligence, Other sub-topics, if any.

(B) **General Awareness:** Questions in this component will be aimed at testing the candidates general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also

include questions relating to India and its neighbouring countries especially pertaining History, Culture, Geography, Economic Scene, General Policy & Scientific Research.

(C)**Quantitative Aptitude:** The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage, Ratio & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra, Graphs of Linear Equations, Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle, common tangents to two or more circles, Triangle, Quadrilaterals, Heights and Distances, Histogram, Bar diagram & Pie chart

(D)**English Language & Comprehension:** Questions in this components will be designed to test the candidate's understanding and knowledge of English Language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting mis-spelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, cloze passage & comprehension passage.

➤ Surveyor (Post Code 17)

Part-I

- Occupational safety & health, PPE, etc. Basic drawing (consisting of lettering, numbering, geometrical figure, symbols & representations). Drawing of different scales, projections, perform site survey and prepare a site plan using chain/tape, prismatic compass, perform AutoCAD drawing. Observation of all safety aspects is mandatory. Safety components like OSH&E, PPE, Fire extinguisher, First Aid, etc. Knowledge of creating drawing using toolbars, commands, and menus. Plotting drawing from CAD.
- Basic knowledge of Different site survey using Plane table (radiation, intersection, traversing, determination of height), Theodolite (measurement of angle, traversing, computation of area), tachometer (determination of horizontal and vertical distance, constants, etc.) Advance knowledge of site survey using levelling instrument (different levelling - differential, reciprocal etc.) field book entry, plotting, mapping, calculation of area, preparing traverse drawing, simple building drawing using CAD.
- Topographical map using Level instruments with contours (Interpolation of contour, preparation of section, computation of volume, setting of simple, compound, reverse, transition and vertical curve), performing survey using Total Station and preparation of map (measurement of angle, co-ordinates and heights, downloading survey data and plotting), making of site plan by Cadastral survey (preparation of site plan, calculation of plot area, etc.), performing road project survey (location survey and preparation of route map, profile/longitudinal/cross sectional levelling and plotting) and survey drawing using CAD.
- Drawing of cartographic projection, setting and application of GIS & GPS techniques in various fields, collection and processing of data, performing hydrographic survey (determining hydrographic depth, measuring velocity of flow, determining cross sectional area of river, calculating the discharge of a river, etc.). Basic knowledge about performing transmission line site survey (making of alignment, conducting detailed survey, final location survey and making of tower foundation pit point), performing railway line site survey, drawing of building by CAD and preparation of estimation etc.

- Demonstrate knowledge of concept and principles of basic arithmetic, algebraic, trigonometric, statistics, co-ordinate system and apply knowledge of specific area to perform practical operations.

Part-II: To measure candidate's reasoning ability, quantitative aptitude and proficiency in English and General Awareness

- a) Test of Reasoning
- b) Test of Quantitative Aptitude
- c) Test of General Awareness and
- d) Test of English Language

➤ **Stenographer Grade 'D' (Post Code 18)**

General Intelligence & Reasoning: It would include questions of both verbal and non-verbal type. The test will include questions on analogies, similarities and differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discriminating observation, relationship concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series, non-verbal series etc. The test will also include questions designed to test the candidate's abilities to deal with abstract ideas and symbols and their relationship, arithmetical computation and other analytical functions.

General Awareness: Questions will be designed to test the ability of the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspects as may be expected of an educated person. The test will also include questions relating to India and its Neighboring countries especially pertaining to Sports, History, Culture, Geography, Economic scene, General Polity including Indian Constitution, and Scientific Research etc. These questions will be such that they do not require a special study of any discipline.

For VH candidates of 40% and above visual disability /cerebral palsy affected candidates and opting for scribe there will be no component of Maps/Graphs/Diagrams/Statistical Data in the General Intelligence & Reasoning / General Awareness Paper.

English Language & Comprehension: In addition to the testing of candidates' understanding of the English, its vocabulary, grammar, sentence structure, synonyms, antonyms and its correct usage, etc. his/her writing ability, would also be tested.

Skill test in Stenography: Candidates who obtain the qualifying marks in the Written Examination as may be prescribed by the Commission will only be called for the Skill Test. It may also prescribe qualifying marks in each part of the Written Examination. THE SKILL TEST WILL BE OF QUALIFYING NATURE and the Commission will fix the qualifying standards in the skill test for different categories of candidates.

The candidates will have to appear for the stenography test. The candidates will be given one dictation for 10 minutes in English / Hindi at the 80 w.p.m. The matter will have to be transcribed on computer only. The evaluation of transcription will be done electronically only. The transcription time is as follows:-

For Stenographer Grade 'D' : 50 minutes (English) 65 minutes (Hindi)

➤ Assistant Director (Landscape) (Post Code 19)

Part-I

Plants: Plant structure, functions and development; familiarity with local flora; criteria for plant selection; history of planting design; planting as a design element with respect to trees, shrubs, ground cover and creepers; planting features like form, leaf color and texture, branching habit and trunk form and their texture, color of flowers and fruits in different seasons; role of plant material in environmental improvement (e.g. soil conservation, modification of microclimate); maintenance of plant material; preparation of planting concepts, planting plans and plant schedules; estimation of costs and bill of quantity.

Geology, Hydrology & Geomorphology: minerals and metals; rock type (igneous, sedimentary, metamorphic); principles of stratigraphy and geology of India; application of geological information in the interpretation of landscapes; relationships between geology, soils and vegetation; morphology and classification of soil type; properties of soils; soil management (evaluation, water conservation, fertility and plant nutrition, degradation control and reclamation techniques); hydrological cycle, sources of surface water; watersheds and drainage basins; infiltration characteristics; rainwater harvesting, artificial recharge; groundwater management, ground water pollution; landscape evolution.

Site Planning and Landscape Engineering: Site planning process; site character and design requirement relation; site survey and appraisal; contours and grading principles; efficient surface drainage pattern and watershed area, calculation of surface runoff, catchments areas and discharge rate; types of drainage systems, design of surface and sub-surface drainage elements; sports field drainage; earthwork volume computations; construction of roads, parking, paths, plazas, planter, water elements, etc; external lighting; irrigation and plumbing system; street/ site furniture; landscape working drawings; site mobilization and protection measures; water conservation; protection of water retention structures; soil conservation and erosion control measures; land reclamation and rehabilitation process; disposal of sludge, fly-ash, solid and liquid waste; transportation corridors; environment-friendly materials; sustainable landscape features (bio-swales, bio retention ponds etc); estimation of costs and preparation of bill of quantities, specifications and tender documents.

Landscape Design and Communication: Urban and rural landscape appraisal, analysis and design; application of ecological principles; language skills for technical report 'writing and-professional communications with planning authorities, statutory bodies, contractors and other professionals; communication techniques in digital media; research ability towards establishing a strong theoretical background.

Ecology: Concept of ecosystem: energy flow; production; biogeochemical cycles; carbon cycle, global water cycles, nitrogen cycle; bioaccumulation and biomagnifications; ecosystem services; ecosystem types; ecological succession and maturity; population dynamics; ecosystem management; climate change

Theory of Landscape Architecture: Concepts of space, time and scale in terms of garden, landscape and nature; evolution of landscape and garden design in relation to art, architecture and city planning; changing perceptions of man's relationship with nature in various phases of history; environmental and behavioral theories; social and cultural dimensions of landscape; Ancient Indian traditions; Landscape from various geographic locations and periods, highlighting aspects of Form, Space and Order; Development of landscape design and gardens; Eastern, Central and Western traditions; Ancient Heritage: Mesopotamia, Egypt, Greece, Rome. Western Civilization: Europe; Italy, France and England. The middle-east: The Persian tradition and its far reaching influence. Eastern Civilisation: China and Japan. Ancient and medieval period in India; Mughal and Rajput Landscapes. Influences and linkages across cultures and traditions, e.g Chinese tradition and the English Landscape style, influence of Persian traditions towards the West and

East. Colonial landscape development in India

Nineteenth Century Europe: The socio-cultural impact of industrialization and urbanization; its effect on public health legislation and the development of new landscape types, public parks and facilities for sports. Open space development in its urban design and planning context. Early industrial towns and the Garden City movement. USA: Further evolution of the public park as a major component of urban landscape. The work of F. L. Olmsted and other pioneers. Park-Systems and suburban development centered on open space. The Modern Movement: changing concepts of space and the relationship of architecture and landscape illustrated through studies of selected works of the modern masters. Post-war development in Europe: New Towns in England and the concept of Landscape Structure. Landscape Urbanism; Examples of open space development in new towns and urban renewal to illustrate the close conceptual relationship between town planning, urban design and landscape architecture (e.g. Haussmann's Paris, Lutyen's Delhi); influence of Ian McHarg on mid and late 20th Century landscape architecture.

The work of selected twentieth century landscape architects, in the west as well as in India. Contemporary concepts and concerns: "Green" Architecture and Energy-Saving site planning and Landscape Architecture; Cultural landscapes, their definition, identification, characteristics and policies; Landscape inventory and conservation of historical landscape; Artistic sensibility in Landscape Architecture, land art; new developments in urban landscape design. The Indian Context: Understanding contemporary attitudes to open space design in India: ancient horticultural tradition, Mughal influence, British colonial influence. Trends in landscape design in India in the late 20th and the first decade of the 21st Century.

Remote Sensing and GIS: Concept and Foundation of Remote Sensing; Geographical Information Systems; Composition of Geographical Information System; Computer Hardware Module; GIS Software Module; Data Input; Data Storage; Data Output; Database Structures; Application of GIS & Remote Sensing; Automated Mapping/ Facility Management. (AM/FM); Digital Image Processing and Editing; Error Detection and Correction; Geo Spatial Analysis: Turning Data into Meaningful information; Comparison of Vector & Raster Methods; Internal G.I.S. Network Analysis; Open GIS.

Landscape Economics, Management & Horticultural Practice: Economics: Cost and benefits related to open space development; Tangible costs of development; capital and maintenance costs: intangible costs, depletion of natural resources, modification of ecological systems rehabilitation cost, social and cultural changes. Unit cost of development of open space. Management: Landscape management at the regional scale in relation to soil conservation, water management, grassland management, forestry and agriculture. Management practices related to urban ecology and urban habitats, such as urban forests, river banks, regional parks and greenbelts: ecological, economic and administrative issues. Management models. Horticulture Practice: Nursery establishment and Plant propagation. Establishment and maintenance of grass, shrubs and trees with respect to: ground preparation, planting and transplanting, pruning; Horticulture practice and maintenance; Common plant pests, diseases and their control; manures and insecticides and their application; Protection of plant material; Water Budgeting; Equipment for landscape maintenance; Mode of Evaluation.

Landscape Resources: Settlements and Landscape: Siting and evolution of cities; Role of landform, water systems, climate and vegetation; Illustrative studies of cities in India and elsewhere; Microclimate; Air pollution; Solid waste management; conservation of water resources and vegetation cover; Urban forest; Landscape heritage; City development Plans, Zonal Plans and structure plan. Development controls and their role in the conservation and creation of urban landscape; Delhi Master Plan; National Environment Policy; The rural landscape; Forest types of India; Biodiversity, urban biodiversity, wildlife conservation; Agricultural practices and formation of

traditional rural landscape; Wetlands: definition, wetland values and conservations; Wastelands management; Land reclamation and rehabilitation; Watersheds and its management; Resource conservation, land capability classification; mechanical, vegetative and agronomic measures in soil and water conservation.

Landscape Conservation and Regional Landscape Planning; Concept of Landscape Planning and Landscape Conservation; Landscape Assessment techniques; Basic quantitative methods of collecting, analyzing, projecting and presenting data for Landscape Planning. Application of G.I.S. and Remote sensing in Landscape Planning; Landscape Conservation: Priorities, Policies and Programmes; National parks and other protective designations; Biodiversity and Biosphere reserves; Endangered landscapes; Aspects of watershed management. The application of landscape planning techniques to large scale developments such as infrastructure and power projects, extractive and manufacturing industry, new towns and urban extensions, and developments for tourism and eco-tourism; Landscape perception, visual assessment and the aesthetic dimension of landscape planning. Environmental Impact Assessment and the Environmental Impact Statement: Theory and Practice; role of Environmental Legislation and the Ministry of Environment and Forests.

Landscape Project Management and Professional Practice: The role of statutory and regulatory bodies such as the Municipal Corporation, N.D.M.C, D.D.A and Urban Art commission etc.; Construction administration , Implementation process; Sequence of activities from inception to completion; Budgetary control, progress evaluation and monitoring: various kinds of estimates, review and updating, simple examples of pert charts and bar diagrams. Site documentation, Site instruction book, periodic reports, visual records, bar charts etc.; Techniques of inspection and quality control; Construction documents Contract Procedure; Criteria for selecting contractors: the process of calling tenders. Comparison of various kind of tenders with regard to objectives, utility and appropriateness. Tender Documentation and evaluation of tender; negotiations with contractors. Contract Documentation: Forms of contract; General and special conditions, specifications, Bill of quantities; significant clauses pertaining to defects, maintenance, arbitrations, etc. Parties to the contract; their roles, contractual relationships and legal obligations; Forms of agreement, conditions of engagement, scope of work and services to be provided. Scale of Professional Fees: Common and accepted methods of charging fees, percentage, lump sum, time-basis etc. Calculation and estimation of fee based on work involved. Taxes, remuneration and reimbursement. Role of Professional Institute: Professional code of conduct. Relationship of Landscape Architect with other professionals. Practical illustrations of various aspects of Client-Landscape Architect transactions, especially with regards to the establishment of credibility and trust; Landscape Design Competitions: Types, Guidelines

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*****End*****