INDICATIVE SYLLABUS

➢ Deputy Director (Architect) Post Code :01

Part-I

1. ARCHITECTURAL DESIGN

-MASS HOUSING

- Design of a Low Rise buildings and High Rise Housing towers
- Basement Parking with services.
- History of various Government Mass Housing schemes after independence.
- Housing Policy, Case studies and surveys.
- Architectural design of various typology of housing.
- Housing Ownership types
- Factors influencing land value.
- Housing finance
- Slums and Rehabilitation methods
- New Housing construction technology
- Housing byelaws & legislation.
- Density distribution and Optimisation of space in Housing.
- Use of Green Materials
- Energy Efficiency Rating Systems

-COMMERCIAL COMPLEX/BUILDINGS

- Design of a commercial/cultural/recreational building for District Center, Community centre, Local Shopping Centre, Convenient Shopping Centre
- Design of a service oriented building (shopping mall, large hotel, hospital etc.)
- Multi Level Car Parking.
- Multi-purpose Halls
- Integration of infrastructure services and landscape with built form.

2. BUILDING CONSTRUCTION AND MATERIAL

- RCC framed structure construction
- Pre-Fabricated Building
- UPVC, Steel, Wood, Aluminium doors and windows.
- Cladding Material & Fixing details: Aluminium Cladding, Dry Stone cladding, High Pressure laminates.

- Working Drawing Details of floor plans, elevations, Joinery, Kitchen, Toilet, Staircase, Foundation plans, Expansion joints, Building Services MEP & HVAC.
- Modern Formwork techniques in steel (MIVAN), lift slab construction and formwork of special profiles.
- Prefabrication using pre stressed and post stressed RCC
- Basement construction, Diaphragm Walls, Water proofing details for Underground structures and roofing.
- 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.
- Various types of Façade design, Curtain walls, and their detailing.
- Partition detail and design, false ceiling, wall panelling design and details.

3. URBAN DESIGN

- Transit oriented Development and Integrated Mobility design.
- Form based Codes/Building Bye laws and Spatial Analysis of Built Form.
- History and evolution of Urban design.
- Typology of City Planning, Case studies of historic cities, post-industrial revolution cities and Post-Modern Cities.
- Study of existing city form patterns for development of City extensions, Sub-city panning, Urban regeneration, Adaptive Re-use of spaces etc.
- Urban Morphology, principles and techniques of landscape urbanism & resilient cities
- Techniques and tools for enhancing Pedestrianisation and incorporation of Universal Design principles in urban spaces, roads, open areas, housing, district centres, Commercial spaces etc.
- Local Area planning, legislations related to city fabric and Urban Management of Civic Facility and Amenities.
- Urban Mapping of existing data and analysis for policy making and upgradation of built fabric.
- Case studies of historic Indian cities and cities designed post-independence of India.
- Garden City Design, City beautiful Movement.
- Human settlement, relationships between nature, humans, society, social infrastructure, urbanisation and the built environment within settlements.
- Urban Design guidelines for a Precinct, Neighbourhood and Façade design
- Standards for Signage, Wayfinding
- Urban lighting for historic buildings etc.
- Understanding of physical, social and economic parameters for Cities and regional planning.
- Relationship for regional planning with national level planning development of new towns/ cities, sub-cities, city extensions.
- Urban Mapping and GIS tools.

4. STRUCTURAL DESIGN

- Design of RCC, steel beams & columns, staircases, RCC slabs, foundation etc.
- Theory and design of steel structures, Funicular shells and Geodesic domes.
- Analysis of existing Load Bearing and Framed structures.
- Bending Moment and Shear Force calculations.
- 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

- Firefighting norms and design principles.
- Fire resisting materials, Fire rating of materials, Fire protection equipment, Pressurisation shafts, Mechanical ventilation, Fire Check Floor design, NBC standard and bye laws applicable in building design.
- Integration of Mechanical, Electrical, Plumbing and HVAC, Air Conditioned spaces, Radiant cooling etc. in building design.
- Types of Building acoustic materials, construction details and calculation of reverberation time.
- Principles of good acoustical design for different building types. Acoustical defects and their solutions.
- Noise elimination active and passive techniques.
- Human comforts conditions and standards.
- Natural and mechanical ventilations.
- 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, travel time & spatial requirement.
- Escalators size, location, equipment.

6. HISTORY OF ARCHITECTURE

- Industrial revolution and its architectural implications in America, Europe and Asia.
- Town planning trends in Europe.
- High rise Architecture. 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.
- Modernism, Post Modernism, Neo Modernism.
- Post-independence Architecture.
- Exploring regionalism in contemporary Indian architecture.
- Birth of Indo Sarscenic Style.
- Classical Revival and building of New Delhi/ Lutyens Delhi.
- Architecture of Hindu Temple in North and South india, Mosque, Church, Stupas
- Indian vernacular architecture principles and materials.

7. ESTIMATING AND COSTING

- Methodology of Estimation and Costing in Delhi Schedule of Rates
- Costing and valuation, different types of estimates
- Thumb rules used in estimating
- Methods of preparing BOQ, long wall, short wall method
- Centre line method
- BOQ for journey works
- Quantity estimation for various construction typologies.
- Principles of economics in building planning
- Valuation forms of tenders in building civil works.
- Analysis of rates for various building works.

8. MASTERPLAN OF DELHI, BUILDING BYE LAWS AND STATUTORY APPROVALS

- Working knowledge of various provisions in Master Plan of Delhi and UBBL
- Study of Model building bye laws and study of national building code.
- Study of process of approval from DUAC, DFS, RERA, Environmental Impact Assessment.
- Case Study of building Bye Laws of new Indian cities like Bhubaneshwar, Gandhinagar, Naya Raipur, Chandigarh and Delhi etc.
- Submission drawings – study and requirements.
- Legal responsibilities and ethics
- Notice inviting tenders, tender documents agreement contract
- Professional practice: Negotiation arbitration, arbitrator its advantages/ disadvantages, billing.

9. SPECIFICATION

- Writing specifications of Excavations, Earthwork, Foundations, Damp proof courses, Brick masonry, Concrete, Flooring, Timber doors and windows, Doors and windows etc.
- Writing specifications of Painting and other finishes
- Writing specifications of Sanitary fittings and fixtures

- Writing specifications of Electrical wiring and fixtures
- Specifications as part of the tender documents.

10. PROFESSIONAL PRACTICE & OFFICE ADMINISTRATION

- Architect's Act 1972, Council of Architecture norms and standards regarding fees and scale of charges.
- Coordination with different professional personnel like Civil and MEP Engineers, City Planners, Geographers, Transport Planners, Historians, NGOs and various other stakeholders.
- Site inspection reports, documentation of progress of work.
- Record keeping an accounting of works done during construction. Time analysis, CPM , PERT
- Value engineering man power and labour laws.
- Tendering
- Contracts and arbitration
- Valuation
- Professional conduct and ethics
- Role of COA, IIA and UIA

11. INTERIOR DESIGN

- History of interior design
- Theory of interior design
- Art in Interior Design
- Furniture and Furnishings
- Case studies of Indian and International design
- Principles of aesthetic composition in interiors
- Interiors design in history
- 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.

12. ENERGY EFFICIENT BUILDINGS AND RATING SYSTEMS IN ARCHITECTURE

- GRIHA norms
- IGBC norms
- Ecological impact of buildings.
- Sustainable methods of construction
- LEED certification

- Green building Councils.
- Green features in buildings
- Sustainable Development Goals
- Urban Heat Island Effect
- Use of energy in buildings.
- Conserving energy
- Solar passive and solar active systems
- Wind energy
- Biomass energy
- Recycling of waste
- Intelligent building systems.
- ECBC Norms for Residential and Commercial Buildings.

13. ARCHITECTURAL CONSERVATION

- Introduction, history of conservation, modern movement in architecture and its association with conservation movement in architecture, prominent debates associated with conservation, - SPAB and violet-Le-ducs contribution.
- Various definitions: Heritage, culture, historicity, historic/ Historical building, monument,
- Authenticity, historic site, building fabric, setting of a monument conservation, restoration, repair.
- Architecture Conservation and Restoration
- Study of historic building materials and construction techniques
- Reconstruction maintenance, refurbishment, adaptive reuse, architecture in conservation n
- 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 Archaeological 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.

14. SOFTWARES

- AutoCAD 2D and 3D
- REVIT
- Photoshop
- Sketchup 3d
- MS Office Suite (Word, Excel, Powerpoint etc.)

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Deputy Director (Public Relation) Post Code: 02

Part-I

UNIT-1: PUBLIC RELATION

- Public Relations: Definitions, PR as a communication function.
- Difference between PR, Propaganda and Public Opinion, Advertising.
- PR as a two-way communication, process of PR, PR in different sectors like Govt., Non-Govt.
- Publics in Public Relations, Management of Crisis by PR. PR communication and how to be effective PR communicator.
- Recent PR trends in digital, social, content and influencer marketing.
- Brand Management and Image Building.

UNIT-2: PR PUBLICS

- Types of PR Public: Internal and External
- PR Tools, Press Conference, Press Releases, Journals
- Code of ethics of PR, Laws pertaining to Press.

UNIT-3: ADVERTISING

- Definitions, Scope Functions, historical development
- Types of Advertising
- Ethical Aspects of Advertising, Law and Advertising.
- Advertising and Marketing
- Digital and Social Media advertising

UNIT-4: Advertising Agency

- Structure and Functions and Types of Advertising Agency
- Advertising Appeals, media Selection and copy writing-newspapers, magazines, Radio, Television, Outdoor.
- Advertising testing and research.
- Current Media Landscape
- Test of Media literacy and Digital competency

Part-II

(a) Test of reasoning
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(e) Computer Knowledge

➢ Deputy Director (Planning) Post Code: 03

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.

Section2: 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 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.

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.

(i) 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.

(ii) Delhi Development Act, (DDA 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.

(iv) 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.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ 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.

Section2: 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 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.

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Part-II

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➢ Assistant Director (Architect) Post Code: 05

Part-I

1. ARCHITECTURAL DESIGN

- Design of various types of low-rise and high-rise buildings like Housing, socio-cultural centers, commercial centers, primary health clinic, Nursery school, neighborhood shopping incorporating services and basic elements of structural grid, parking grid and building MEP services integration.
- Physical study of environment of a rural settlement, covering various aspects related to physical and civil infrastructure.
- Study of life, philosophy and works of Walter Gropius, Frank Lylod wright, Mies Van Der Rohe, Lecorbusier, Louis Khan, Joseph Allein Stein, Charlies Correa, Achut. P. Kanvinde, B.V. Doshi, Raj Rewal.
- Multi Level Car Parking.
- Multi-purpose Halls
- Slum-Rehabilitation
- Integration of Services in Buildings, basement and coordination of services in site plan.

2. BUILDING CONSTRUCTION AND MATERIAL

- Concept of RCC frame structures.
- RCC staircase, Lintel, Beam, Column, Slab, Footing & Foundation.
- Autoclaved Aerated Concrete (AAC Blocks)
- Cellular Lightweight Concrete (CLC blocks)
- Detailed sections through architecture building.
- RCC frame structure with in-fills.
- Structural steel member sections , joining details, and roofing details.
- Steel Foundations, steel frames, staircase, Steel mezzanine floor, Steel truss Support system for roofing and Cladding.
- Collapsible and rolling shutters.
- Wood, Steel, UPVC, Glass door and windows

3. 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 Force, Bending Moment 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 affixed beam subjected to uniformly distributed load and point load.
- Theory and design of reinforced T-beams, inverted T-bean sand 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.

4. BUILDING SERVICES

- Firefighting norms and design principles.
- Fire resisting materials, Fire rating of materials, Fire protection equipment, Pressurisation shafts, Mechanical ventilation, Fire Check Floor design, NBC standard and bye laws applicable in building design.
- Integration of Mechanical, Electrical, Plumbing and HVAC, Air Conditioned spaces, Radiant cooling etc. in building design.
- Types of Building acoustic materials, construction details and calculation of reverberation time.
- Principles of good acoustical design for different building types.Acoustical defects and their solutions.
- Noise elimination active and passive techniques.
- Human comforts conditions and standards.
- Natural and mechanical ventilations.
- 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, travel time & spatial requirement.
- Escalators size, location, equipment.

5. GRAPHICS

- Perspective drawing, its concept and various elements and methods.
- 3-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.
- Sciography of various architectural builtforms.

6. HISTORY OF ARCHITECTURE

Indian Subcontinent

- Architectural forms and construction technology
- History of 7 cities of Delhi and Monuments of each era
- 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.
- Italian Renaissance and the contribution of Michaelangelo and Leonardo Da Vincci.
- Baroque and Rococo as Outlying Styles of Renaissance.
- Influence of Italian Renaissance on Architecture in England.
- Neoclassism, Modern, Post Modernism, International style of Architecture.

7. 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.
- Scientific names of various commonly used trees, shrubs, creepers etc.

8. 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.

9. COMMUNICATION SKILLS

- Principles of communication.
- Presentation skills for projects.
- Report writing for publication.
- Working knowledge and formal communication in Hindi Rajbhasha and English
- Meetings
- Technical Noting and Drafting for files, e-office etc.

10. SOFTWARES

- AutoCAD 2D and 3D
- REVIT
- Photoshop
- Sketchup 3d
- MS Office Suite(Word, Excel, Powerpoint etc.)

Part-II

(a) Test of reasoning
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➢ Assistant Director (Landscape) Post Code: 06

Part-I

1. **Plants:** 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 colour and texture, colour 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. Planting design in various environments such as woodlands, forests, rural areas, urban areas, roadside planting in urban and rural areas, industrial sites and in habitats such as grasslands, woodlands, sloping areas, marshes, bogs, wetlands, waterside and aquatic planting etc. Planting for shelter, windbreaks and shelter belts, visual effect and accent; Field ecology: Quadrat, line transect, community analysis.

2. **Geology, Hydrology & Geomorphology:** minerals and metals: rock type (igneous, sedimentary, metamorphic); principles of stratigraphy and geology of India; 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); Soil Conservation; hydrological cycle, sources of surface water, watersheds and drainage basins and their management; infiltration characteristics: rainwater harvesting, artificial recharge; groundwater management, ground water pollution; landscape evolution..

3. **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 corrosion control measures; land reclamation and rehabilitation process; disposal of sludge, fly-ash, solid and liquid waste: transportation corridors; environment-friendly materials; sustainable landscape features (bioswales. bio retention ponds etc); estimation of costs and preparation of bill of quantities, specifications and tender documents.

4. **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. Elements of Landscape Design and Knowledge of Native plants at Delhi ;Principles of Landscape design, Elements of Landscape Design like, water, earth etc

5. **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.

6. **Nineteenth Century Europe:** 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 master 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 lan Mellary 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 Earb 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.

7. **Landscape Economies, Management & Horticultural Practice:** Economics: Cost and benefits. related to open space development; costs: intangible costs, depletion of natural resources, 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:

8. **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. 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. Wetlands: definition, wetland values and conservations; Wastelands management: Land reclamation and rehabilitation; Watersheds and its management: Ramsar Convention, Forest Policy and management of forest resources. Conservation Forestry. Bye laws and planning regulations applicable to landscape development.

9. **Landscape Conservation and Regional Landscape Planning;** Concept of Landscape Planning and Landscape Conservation; Landscape Assessment techniques: Basic quantitative methods of collecting, analysing, projecting and presenting data for 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-touristic; Landscape perception, visual assessment and the aesthetic dimension of landscape planning.

10. **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; progress evaluation and monitoring: (Estimation), Site documentation, Techniques of inspection and quality control; Construction documents 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: Relationship of Landscape Architect with other professionals. Landscape Design Competitions Types, Guidelines.

11. **Ecology and Environmental studies:** Concept of ecosystem management & services; ecosystem types; ecological succession and maturity; population dynamics; climate change; environmental conservations and biodiversity; Climatology; environmental morality and ethics; Environmental Impact Assessment; Theory and Practice; role of Environmental Legislation, NGT and the Ministry of Environment and Forests; energy flow; production; biogeochemical cycles: carbon cycle, global water cycles, nitrogen cycle, bioaccumulation and bio-magnifications.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Assistant Director (System) — Post Code: 07

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

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

New Syllabus

➢ Assistant Director (Ministerial) — Post Code: 10

Part-I

- **Business Ethics & Entrepreneurship:** Addresses ethical considerations in business practices, starting and managing new businesses, Analyzing real-world business scenarios.
- **Strategic Management:** Develops skills in strategic planning and decision-making.
- **Managerial Economics:** Applies economic theory to business decision-making.
- **Financial Accounting:** Covers financial statements, analysis, and reporting, Involves corporate finance, investment banking, and financial markets.
- **Quantitative Methods:** Uses statistical analysis for business decisions.

- **Marketing Management:** Explores marketing concepts, strategies, and consumer behaviour, Focuses on marketing strategy, branding, and digital marketing.
- **Organizational Behavior:** Studies individual and group behavior in organizations, Collaborative learning and problem-solving.
- **Operations Management:** Focuses on managing production and service delivery.
- **Business Law:** Introduces legal principles relevant to business operations.
- **Business Communication:** Enhances communication and presentation skills.
- **Human Resources Management:** Covers recruitment, training, and employee relations,
- **Operations & Supply Chain Management:** Explores logistics, production, and supply chain optimization.
- **Information Technology Management:** Explores the role of technology in business.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Legal Assistant — Post Code: 11

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.
- Hindu Succession Act,1956
- Indian Succession Act, 1925
- Bharatiya Sakshya Adhiniyam, 2023
- Commercial Courts Act, 2015
- Indian Contract Act, 1872
- Arbitration & Conciliation Act, 1996

- The Land Acquisition Act, 1894
- Right to fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013
- The Registration Act, 1908
- The Public Premises Act, 1971
- The Limitation Act, 1963
- Delhi Apartment Ownership Act, 1986
- The Indian Evidence Act, 1872
- Bharatiya Nagarik Suraksha Sanhita, 2023

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Planning Assistant — Post Code: 12

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, 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.

Section 4: 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.

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

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness
(d) Test of English Language
(e) Computer Knowledge

➢ Architectural Assistant — Post Code: 13

(A) Architectural Design theory and practice

1. Meaning of design and Design in everyday life.
2. Logical design reasoning.
3. Elements of design-line, form, color texture.
4. Principles of design–unity, variety, hierarchy.
5. Scale and proportions.
6. Balance, emphasis.
7. Focus, fashion, decoration.
8. Basic design and architectural design –Elemental Differentiation.
9. Perception and experience.
10. Tangible and intangible in architecture.
11. Function, structure and form.
12. Space, space usage and inter relationship of spaces.
13. Circulation within Spatial Units.
14. Horizontal Circulation.
15. Vertical Circulation.

16. Circulation and Spaces, between buildings.
17. Relationship of plan, section and elevation.
18. Architectural scale.
19. Programming in Architectural design.
20. Site Planning
21. Urban Design
22. Project Management

(B) <u>BUILDING CONSTRUCTION, SURVEYING & STRUCTURE</u>

1. Building Materials
2. Building Technology & Innovations
3. Surveying methods
4. Specifications of various building materials
5. Estimating & Costing of buildings
6. Working Drawings/GFC, Sections, Toilet & Staircase details, Door & window schedules
7. Surveying
8. Retrofitting
9. Basic Structure
10. Basic components of "building"
11. Role of Pre Cast Construction in Architecture
12. Brick as a structural material.
13. Stones as a building material
14. Stone masonry construction.
15. Basic structural design elements.
16. Definition and concepts: Instruments used; acquaintance with electronic surveying instruments.
17. Principles of surveying, Unit of Measurements.
18. Chain surveying.
19. Compass Surveying.
20. Leveling.
21. Contouring: Topographic maps.
22. Plan tabling
23. Marking foundations
24. Measuring building under construction.

STRUCTURAL DESIGN

1. Forces in structures.
2. Moments in structures.
3. Loads in structures.
4. IS: 875
5. IS: 456
6. Types of supports.
7. Shear Force, Bending Moment.

8. Center of Gravity, Moment of interia.

(C) <u>PROFESSIONAL PRACTICE: BUILDING NORMS & APPROVALS</u>

1. Master Plan of Delhi.
2. Unified Building Bye Laws of Delhi.
3. National Building Code
4. Fire safety norms
5. Disaster/ Risk Management
6. Harmonized guidelines & standards for universal accessibility in india.

(D) BUILDING SERVICES

1. Sources of surface and ground water, treatment of water, transportation and distribution at town level.
2. Water supply system: fittings, direct and indirect supply, layout and sizes of pipes, hot water supply, storage.
3. Sewerage system: systems, fitting and fixtures, sizes and layout, sewage collection, sewage treatment and disposal at town level.
4. Solid Water management.
5. Rain water drainage.
6. Water, Waste & Sanitation
7. Electrification, Lighting & Acoustics
8. HVAC, Mechanical Mobility, Fire Safety

(E) ENVIRONMENTAL STUDIES

1. The Multidisciplinary nature of environmental studies, Definition, scope and importance.
2. Natural Recourses.
3. Renewable and non-renewable resources.
4. Natural resources and associated problems.
5. Ecosystems.
6. Biodiversity and its conservation.
7. Environmental pollution.
8. Climate responsive design.
9. Green building rating systems such as GRIHA, ECBC, LEED etc.
10. Sustainable / Energy Efficient Building Design.
11. Social issues and environment.
12. Human population and environment.

(F) <u>HISTORY OF ARCHITECTURE</u>

Indian Subcontinent

1. Indus valley civilization.
2. Aryan/Vedic civilization.
3. Buddhist and Jain civilization.
4. Indio Aryan Temple Architecture.
5. Early and late Chalukyan architecture.
6. Dravidian Temple Architecture.
7. Vernacular Architecture

WESTERN WORLD

8. Ancient civilization-Mesopotamian, Sumerian, Babylonian, Persian, Assyrian, Egyptian civilization.
9. Classical Greek Architecture.
10. Roman Architecture.
11. Early Christian Architecture.
12. Romanesque Architecture.
13. Early Gothic Architecture.
14. Modern & Post-Modern Architecture
15. Work of Architects (such as B.V. Doshi, Charles Correa, Hafiz Contractor, Joseph Allen Stein, Raj Rewal, A.P. Kanvinde, Frank Gehry, Zaha Hadid, Norman Foster, Moshe Safdie, Kengo Tange etc.

(G) COMPUTER APPLICATIONS

1. AutoCAD -2D,3D drawing
2. REVIT
3. MS Office (Word, Excel, Power point)
4. Adobe Photoshop
5. Sketchup & Walkthrough

(H) ARCHITECTURAL GRAPHICS

1. Drafting of lines, Orthographic projections, Representing simple solids, Lettering.
2. Architectural Graphic Symbols, Drawing Scale, measured drawing of a simple object
3. Drawing, editing, modifying commands in 2-D using Auto CAD, Setting in plotting.
4. Drawings on Standard formats.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and

(d) Test of English Language
(e) Computer Knowledge

➢ Programmer — Post Code: 14

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 Angular Java, PSP, Asp.Net, Java and Android/ Mobile Apps 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, My SQL Sybase Ingress etc.
- Internet and Web Technologies

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness
(d) Test of English Language
(e) Computer Knowledge

➢ Junior Engineer (Civil) — Post Code: 15

Part-I

Civil Engineering:

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.

Estimation, Costing and Valuation: estimate, glossary of technical terms, analysis of rates, methods and unit of measurement, Items of work – earthwork, Brick work (Modular & Traditional bricks), RCC work, Shuttering, Timber work, Painting, Flooring, Plastering, Boundary wall, Brick

building, Water Tank, Septic tank, Bar bending schedule, Centre line method, Mid-section formula, Trapezoidal formula, Simpson's rule, Cost estimate of Septic tank, flexible pavements, Tube well, isolates and combined footings, Steel Truss, Piles and pile-caps. Valuation – Value and cost, scrap value, salvage value, assessed value, sinking fund, depreciation and obsolescence, methods of valuation

Surveying: Principles of surveying, measurement of distance, chain surveying, working of prismatic compass, compass traversing, bearings, local attraction, plane table surveying, theodolite traversing, adjustment of theodolite, Levelling, Definition of terms used in levelling, contouring, curvature and refraction corrections, temporary and permanent adjustments of dumpy level, methods of contouring, uses of contour map, tachometric survey, curve setting, earth work calculation, advanced surveying equipment

Soil Mechanics: Origin of soil, phase diagram, Definitions-void ratio, porosity, degree of saturation, water content, specific gravity of soil grains, unit weights, density index and interrelationship of different parameters, Grain size distribution curves and their uses Index properties of soils, Atterberg's limits, ISI soil classification and plasticity chart Permeability of soil, coefficient of permeability, determination of coefficient of permeability, Unconfined and confined aquifers, effective stress, quick sand, consolidation of soils, Principles of consolidation, degree of consolidation, pre-consolidation pressure, normally consolidated soil, e-log p curve, computation of ultimate settlement Shear strength of soils, direct shear test, Vane shear test, Triaxial test Soil compaction, Laboratory compaction test, Maximum dry density and optimum moisture content, earth pressure theories, active and passive earth pressures, 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.

Irrigation Engineering: Definition, necessity, benefits, 2II effects of irrigation, types and methods of irrigation, Hydrology – Measurement of rainfall, run off coefficient, rain gauge, losses from precipitation – evaporation, infiltration, etc. Water requirement of crops, duty, delta and base period, Kharif and Rabi Crops, Command area, Time factor, Crop ratio, Overlap allowance, Irrigation efficiencies Different type of canals, types of canal irrigation, loss of water in canals Canal lining –

types and advantages Shallow and deep to wells, yield from a well Weir and barrage, Failure of weirs and permeable foundation, Slit and Scour, Kennedy's theory of critical velocity Lacey's theory of uniform flow Definition of flood, causes and effects, methods of flood control, water logging, preventive measure Land reclamation, Characteristics of affecting fertility of soils, purposes, methods, description of land and reclamationprocesses Major irrigation projects in India

Transport Engineering: Highway Engineering – cross sectional elements, geometric design, types of pavements, pavement materials – aggregates and bitumen, different tests, Design of flexible and rigid pavements – Water Bound Macadam (WBM) and Wet Mix Macadam (WMM), Gravel Road, Bituminous construction, Rigid pavement joint, pavement maintenance, Highway drainage, Railway Engineering-Components of permanent way – sleepers, ballast, fixtures and fastening, track geometry, points and crossings, track junction, stations and yards Traffic Engineering – Different traffic survey, speed-flow-density and their interrelationships, intersections and interchanges, traffic signals, traffic operation, traffic signs and markings, road safety

Environmental Engineering: Quality of water, source of water supply, purification of water, distribution of water, need of sanitation, sewerage systems, circular sewer, oval sewer, sewer appurtenances, sewage treatments Surface water drainage Solid waste management – types, effects, engineered management system Air pollution – pollutants, causes, effects, control Noise pollution – cause, health effects, control

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 rectangular & circular sections, 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, importance of water 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 singly reinforced and double reinforced beams, cantilever beams T-beams, lintels One way and two way slabs, isolated footings Reinforced brick works, columns, staircases, retaining walls, water tanks (RCC design questions may be based on both Limit State and Working Stress methods).

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

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Junior Engineer (Elect./Mech.) Post Code: 16

Part-I

- **Electrical Engineering:**

Basic concepts: Concepts of resistance, inductance, capacitance, and various factors affecting them Concepts of current, voltage, power, energy and their units

Circuit law: Kirchhoff's law, Simple Circuit solution using network theorems

Magnetic Circuit: Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configurations e.g., straight, circular, solenoidal, etc. Electromagnetic induction, self and mutual induction

AC Fundamentals: Instantaneous, peak, RMS and average values of alternating waves, Representation of sinusoidal wave form, simple series and parallel AC Circuits consisting of RL and C, Resonance, Tank Circuit Poly Phase system – star and delta connection, 3 phase power, DC and sinusoidal response of R-Land R-Circuit

Measurement and measuring instruments: Measurement of power (1 phase and 3 phase, both active and re-active) and energy, 2 wattmeter methods 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

Electrical Machines : (a) DC Machine – Construction, Basic Principles of DC motors and generators, their characteristics, speed control and starting of DC Motors Method of braking motor, Losses and efficiency of DC Machines (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, OC and SC 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

Synchronous Machines - Generation of 3-phase emf armature reaction, voltage regulation, parallel operation of two alternators, synchronizing, control of active and reactive power Starting and applications of synchronous motors

Generation, Transmission and Distribution – Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, interconnection of power stations Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical faults Switchgears – rating of circuit breakers, Principles of arc extinction by oil and air, HRC Fuses, Protection against earth leakage / over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars Lightning arresters, various transmission and distribution system, comparison of conductor materials, efficiency of different system Cable – Different type of cables, cable rating and derating factor

Estimation and costing: Estimation of lighting scheme, electric installation of machines and relevant IE rules Earthing practices and IE Rules

Utilization of Electrical Energy: Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors

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

- **Mechanical Engineering:**

Theory of Machines and Machine Design:

Concept of simple machine, four bar linkage and link motion, Flywheels and fluctuation of energy, Power transmission by belts – V-belts and Flat belts, Clutches – Plate and Conical clutch, Gears – Type of gears, gear profile and gear ratio calculation, Governors – Principles and classification, Riveted joint, Cams, Bearings, Friction in collars and pivots

Engineering Mechanics and Strength of Materials:

Equilibrium of Forces, Law of motion, Friction, Concepts of stress and strain, Elastic limit and elastic constants, bending moments and shear force diagram, Stress in composite bars, Torsion of circular shafts, Bucking of columns–Euler's and Rankin's theories, Thin-walled pressure vessels

Thermal Engineering:

Properties of Pure Substances: p-v & P-T diagrams of pure substance like H2O, Introduction of steam table with respect to steam generation process; definition of saturation, wet & superheated status Definition of dryness fraction of steam, degree of superheat of steam H-s chart of steam (Mollier's Chart)

1st Law of Thermodynamics: Definition of stored energy & internal energy, 1st Law of Thermodynamics of cyclic process, Non-Flow Energy Equation, Flow Energy & Definition of Enthalpy, Conditions for Steady State Steady Flow; Steady State Steady Flow Energy Equation

2nd Law of Thermodynamics: Definition of Sink, Source Reservoir of Heat, Heat Engine, Heat Pump & Refrigerator; Thermal Efficiency of Heat Engines & co-efficient of performance of Refrigerators, Kelvin – Planck & Clausius Statements of 2nd Law of Thermodynamics, Absolute or Thermodynamic Scale of temperature, Clausius Integral, Entropy, Entropy change calculation of ideal gas processes Carnot Cycle & Carnot Efficiency, PMM-2; definition & its impossibility

Air standard Cycles for IC engines: Otto cycle; plot on P-V, T-S Planes; Thermal Efficiency, Diesel Cycle; Plot on P-V, T-S planes; Thermal efficiency. IC Engine Performance, IC Engine Combustion, IC Engine Cooling & Lubrication

Rankine cycle of steam: Simple Rankine cycle plot on P-V, T-S, h-s planes, Rankine cycle efficiency with & without pump work Boilers; Classification; Specification; Fittings & Accessories: Fire Tube& Water Tube Boilers Air Compressors & their cycles; Refrigeration cycles; Principle of a Refrigeration Plant; Nozzles & Steam Turbines

Fluid Mechanics & Machinery:

Properties & Classification of Fluid: ideal & real fluids, Newton's law of viscosity, Newtonian and Non-Newtonian fluids, compressible and incompressible fluids

Fluid Statics: Pressure at a point

Measurement of Fluid Pressure: Manometers, U-tube, Inclined tube

Fluid Kinematics: Stream line, laminar & turbulent flow, external & internal flow, continuity equation

Dynamics of ideal fluids: Bernoulli's equation, Total head; Velocity head; Pressure head; Application of Bernoulli's equitation

Measurement of Flow rate Basic Principles: Venturi meter, Pilot tube, Orifice Meter

Hydraulic Turbines: Classifications, Principles

Centrifugal Pumps: Classifications, Principles,

Performance Production Engineering:

Classification of Steels: mild steel & alloy steel, Heat treatment of steel, Welding – Arc Welding, Gas Welding, Resistance Welding, Special Welding Techniques i.e., TIG, MIG, etc. (Brazing & Soldering), Welding Defects & Testing; NDT, Foundry & Casting – methods, defects, different casting processes, Forging, Extrusion, etc., Metal cutting principles, cutting tools, Basic Principles of

machining with (i) Lathe (ii) Milling (iii) Drilling (iv) Shaping (v) Grinding, Machines, tools & manufacturing processes.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ Sectional Officer (Hort.) Post Code: 17

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, Lilium 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. Environmental Studies **(**Biodiversity and its conservation Environmental pollution, Climate responsive design**,** Green building rating systems such as GRIHA, ECBC etc)

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledgeincluding MS Office (Word, Excel, Power point) etc.

➢ Naib Tehsildar Post Code: 18

Part-1

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
1) 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, 1954.
o) Land reforms in India.
p) National Capital Territory of Delhi Laws (Special Provisions) Act 2011 along with amendments.
q) The Land Acquisition Act, 1894 (1 Of 1894)
r) Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation arid Resettlement Act, 2013.
s) The Punjab Land Revenue Act, 1887 (Act No. 17 Of 1887)
t) The Delhi Land Reforms Act, 1954 Act 8 of 1954.
u) Administrative Set Up and Governance in NCT of Delhi including Constitutional provisions

Part-II:

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness
(d) Test of English Language
(e) Knowledge of Computer Hardware, MS-Office, Software applications including GIS applications like Google Earth/Maps etc.

➢ Jr. Translator (Official Language) Post Code: 19

- **Stage-I:**
  a) General Hindi: 100 marks (Objective type) b) General English : 100 marks (Objective type) The questions will be designed to test the candidates‟ understanding of the languages and literature, correct use of words, phrases and idioms and ability to write the languages correctly, precisely and effectively. The questions will be of degree level.

- **Stage-II:**
  Translation and Essay: 200 Marks (Conventional Type) The paper will contain two passages for translation-one passage for translation from Hindi to English and one passage for translation from English to Hindi, and an Essay each in Hindi and English, to test the candidate's translation skills and their ability to write as well as comprehend the two

languages correctly, precisely and effectively. The level of the paper will be consistent with the educational qualifications prescribed.

➢ Assistant Security Officer (Non-Min.) Post Code: 20

Part-I : Security Enforcement and Management

- Role and aim of Security Department.
- Organisation of Security Set up.
- Designation and badges of rank.
- Uniform/dress regulation.
- Security Arrangement.
- Surface fire-fighting equipment.
- Importance of physical fitness in uniformed forces.
- Lodging of FIR with local police in given situation.
- Management of regular and special occasion events.
- Security Systems.
- Protocol management at the time of VIP visits.
- Leadership Traits in Security Management.
- Command and Control Systems
- Crowd Control Techniques.

Part-II

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness
(d) Test of English Language
(e) Computer Knowledge

➢ Surveyor Post Code: 21

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(determinationofhorizontalandverticaldistance,constants,etc.)Advanceknowledge 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 leveling 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 ariver, etc.). Basic knowledge about performing transmission line site survey (making of alignment, conducting detailed survey, final location survey and making of tower foundation pitpoint), 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

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness
(d) Test of English Language
(e) Computer Knowledge.

➢ Stenographer Grade - D — Post Code: 22

Stage-I (CBT Examination)

- **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.

- **Computer Knowledge Test** (Qualifying in Nature).

i. **Basic Computer Operations**: Understanding the organization of a computer, CPU, input/output devices, and memory.
ii. **Software**: Knowledge of operating systems (like Windows), and Microsoft Office suite (Word, Excel, PowerPoint).
iii. **Internet Usage**: Web browsing, searching, downloading, uploading, and email management.
iv. **Computer Fundamentals**: Basic concepts like computer memory, backup devices, and ports.
v. **Networking and Cyber Security**: Understanding networking devices, protocols, and basic security threats like hacking, viruses, and preventive measures.
vi. **MS Word**: Word processing, formatting, editing, and document creation.
vii. **MS Excel**: Spreadsheet creation, data management, and formula usage.
viii. **MS PowerPoint**: Presentation design, slide creation, and delivery.

Stage-II (Skill Test)

The skill test will be of qualifying in nature.

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)

Stage-III (Typing Test)

Instructions for (Typing Test)

Subject: Stenographer Grade - D [Post Code: 22] (Typing Test)

1. Kindly read the instructions carefully given in order to avoid disqualification, error and time loss. After reading the instructions carefully, click on the check box to proceed.

2. Displayed text on desktop computerize to be typed in **ENGLISH** or **HINDI** only as opted by the candidate in the online application form.

3. Typing Test is qualifying in nature as mentioned in the notification.

4. It is mandatory for all the shortlisted candidates who have qualified the Stage-I (CBT) to appear in Stage-II (Skill Test) except those candidates who wish to exemption the typing test as per Para-9.5 and they will produce medical certificate in the prescribed format.

5. Candidates opting for English medium should have minimum typing speed of **40 w.p.m.** and for Hindi medium should have minimum typing speed of **35 w.p.m.**

6. Evaluation of typing speed will be done on the basis of the following formula:

$$\text{Speed} = \frac{[(\text{Gross key strokes typed} \div 5) - (\text{incorrect words typed} \times 10)]}{10 \text{ (allotted time in minutes)}}$$

None of incorrect word/mistake is to be ignored.

Example: for English, if Gross key strokes typed = 2200

Incorrect words = 5,

Alloted Time=10 minutes

Then,

$$\text{Speed} = \frac{[(2200 \div 5) - (5 \times 10)]}{10} = 39 \text{ WPM}$$

Result: Not qualified as speed is less than 39 WPM.

7. हिंदी माध्यम टाइपिंग परीक्षा का मूल्यांकन निम्न लिखित फॉर्मूले के आधार पर किया जाएगा:

$$\text{स्पीड} = \frac{[(\text{टाईप किये गये कुल की –स्ट्रोक} \div 5) - (\text{टाईप किये गये कुल गलत शब्द} \times 10)]}{10 \text{ मिनट (दिया गया समय)}}$$

कोई भी अशुद्ध शब्द/गलती की अनदेखी नहीं की जायेगी।

उदाहरण :

टाईपकियेगयेकुलकी-स्ट्रोक = 1950

गलतशब्द = 5

दियागयासमय =10 मिनट

स्पीड= $\frac{[(1950 \div 5) - (5 \times 10)]}{10} = 34$ शब्द प्रति मिनट

परिणाम: स्पीड 34 शब्द प्रति मिनट से कम होने पर पास नहीं किया जाएगा।

8. After candidate logs in to the system, trial typing test will start and to be completed in **2 minutes** wherein candidate will check keyboard and keys operation. There will be break time of **10 minutes** after the trial test. If any candidate-system's keys are not working during this break time, they have to immediately report to the invigilator and get it resolved. The **Actual Typing Test** will begin after the break time as per the information given below. Typing Test will be for **10 minutes**.

Subject	**Exam Duration**	**Overall Duration for (Normal Candidates)**	**Duration for Scribe Candidates with Compensatory Time**
Stenographer Grade-D (Typing Test)	2 min (Mock Test) + 10 min (Break Time) +10 min (Actual Typing Test) (5min extra time for Scribe Candidate)	22 Minutes	27 Minutes

9. The VH candidates will have to bring their own Passage Dictators for the Typing test who have opted for scribe in the online Application Form. The Passage Dictator will read out the passage to VH candidate within the allotted time period.

10. Typing Test Keyboard Layout of English will be available in **English** (US) only and font will be **Times New Roman.**

    For English Typing Test–QWERTY Layout.

11. हिंदी के टाइपिंग टेस्ट के लिए फ़ॉन्ट **Mangal** होगा। कीबोर्ड ले आउट-**Remington Gail** में उपलब्ध होगा।

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1. Do not use special keys or any key at the time of the examination, which is not necessary for the typing of the words given in the displayed text. Do not type any special characters /symbols except those mentioned in the displayed text.

2. Typing Test will be held in **Unrestricted Mode**. In Unrestricted typing, candidates will be allowed to proceed with the typing test, even if content is typed incorrectly. The incorrect text will be highlighted in **RED colour** font in the original text that is displayed in the text box. The text that is typed correctly will be highlighted in **GREEN colour**.

3. The candidate has to type the word being highlighted in the displayed text without any errors. The word typed correctly will be highlighted in **GREEN colour** and word typed incorrectly will be highlighted in **RED colour** as explained in para above. All correct words typed will be highlighted in **GREEN** and all incorrect words typed will be highlighted in **RED**.

4. Each incorrect word highlighted in RED will be treated as one mistake and will be penalised with ten times weightage / multiplication factor as explained in evaluation criteria mentioned in para 6. None of the incorrect word (mistake) will be ignored. Therefore, candidates are advised to use Backspace key and Arrow keys to fix the incorrect word within typed text that is being highlighted in RED. Once the word is corrected the highlighted colour of that word will be turned in GREEN colour.

5. Please ensure that only the word being highlighted in the displayed text is typed. Typing any other word than the highlighted word or typing word subsequent to highlighted word in the displayed text will be treated as incorrect word (mistake) even if the word itself is typed correctly. This/these incorrect word/words will be highlighted in RED colour. Therefore, candidates are advised to ensure that they type the word being highlighted in displayed text and nothing else.

6. **A link for MOCK TEST for typing may be made live *in due course of time* at DDA's official website i.e. dda.gov.in→ Jobs & Intership → View All → latest Jobs→ Job Category → Direct Recruitment 2025 for candidates to get familiar with typing software as described above.**

7. Be patient during examinations and keep calm. You can contact the invigilator for any problem, such as:-

    a. Key-board error
    b. Machine automatic shutdown
    c. Power interruption
    d. Browser crash
    e. Artificially expiring session

8. Your candidature can be revoked if you disturb the peace or in some way disrupt the examination or adopt wrong methods / using restricted electronic gadgets such as Bluetooth device, mobile phone, electronic watch, camera etc. and legal action may be taken against you too.

9. Clock has been installed on the server so the remaining time of the exam will be displayed in the countdown timer at the top right corner of your computer screen.

10. Typing test will be submitted automatically as per the given time.

11. Candidates will not be allowed to leave the Examination Hall until permitted to do so.

Don'ts

1. Don't use any **other key or key combination apart** from those that is required to type the given text.

2. Don't enter any special character/symbol other than mentioned in the provided text. (This could skip words, leads to typing error, could be evaluated as typing mistake).

3. **Don't press back-space or any other key once the test is submitted and summary is displayed.**

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➢ Patwari — Post Code: 23

➢ **General Awareness:** Questions will be designed to test the ability of the candidate's General Awareness of the environment around him/her and its application to society. The questions will be designed to test knowledge of Current Events and of such matter of every day observation as may be expected of an educated person. The test will also include questions relating to History, Polity, Constitution, Sports, Art & Culture, Geography, Economics, Everyday Science, Scientific Research, National/International Organizations/Institutions etc. General awareness with special emphasis on the History, Culture, Demography, Geography & Economy of Delhi, Administrative set up and Governance in NCT of Delhi.

- **General Intelligence & Reasoning Ability**: The syllabus of General Intelligence & Reasoning Ability includes questions of both verbal and non-verbal types. Test may include questions on analogies, similarities, differences, space visualization, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship, concepts, arithmetical reasoning, verbal and figure classification, arithmetical number series etc.

- **Arithmetical& Numerical Ability**: The test of Arithmetical and Numerical Abilities will cover Number Systems including questions on Simplification, Decimals, Fractions, L.C.M., H.C.F., Ratio & Proportion, Percentage, Average, Profit & Loss, Discount, Simple & Compound Interest, Menstruation, Time & Work, Time & Distance, Tables & Graphs etc. of 10^{th} level.

- **English(Language & Comprehension) :** To the testing of candidate's understanding and comprehension of the English Language, questions on its Vocabulary, Grammar, Sentence Structure, Synonyms, Antonyms and its correct usage etc. would also be covered.

- **Hindi or Urdu (Language & Comprehension) :** To the testing of candidate's understanding and comprehension of the Hindi or Urdu Language, questions on its Vocabulary, Grammar, Sentence Structure, Synonyms, Antonyms and its correct usage etc. would also be covered.

- **Knowledge of Relevant Acts:** Delhi Development Act, 1957, Delhi Land Revenue Act, 1954, Land reforms in India, National Capital Territory of Delhi Laws (Special Provisions) Act 2011 along with amendments, The Land Acquisition Act, 1894 (1 Of 1894), Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation arid Resettlement Act, 2013, The Punjab Land Revenue Act, 1887 (Act No. 17 Of 1887), The Delhi Land Reforms Act, 1954 Act 8 of 1954, Administrative Set Up and Governance in NCT of Delhi including constitutional provisions.

- **Computer Knowledge (Qualifying in Nature) :** The questions on basic computer knowledge in both the stages will be from Characteristics of Computers, Computer Organization including RAM, ROM, File System, Input Devices, Computer Software-Relationship between Hardware and Software, Operating System, MS-Office (exposure of Word, Excel/spread sheet, Powerpoint), Information Technology and Society-Indian IT Act, Digital Signatures, Application of information technology in Government for E-Governance,

mobile/Smartphone's, Information Kiosks, Google earth or similar applications.

➢ Junior Secretariat Assistant — Post Code: 24

Stage-I (CBT Examination)

a) (Mathematical Abilities):

Number Systems: Computation of Whole Number, Decimal and Fractions, Relationship between numbers.

Fundamental arithmetical operations: Percentages, Ratio and Proportion, Square roots, Averages, Interest (Simple and Compound), Profit and Loss, Discount, Partnership Business, Mixture and Alligation, Time and distance, Time and work.

Algebra: Basic algebraic identities of School Algebra and Elementary surds (simple problems) and Graphs of Linear Equations.

Geometry: Familiarity with elementary geometric figures and facts: 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.

Mensuration: Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square Base.

Trigonometry: Trigonometry, Trigonometric ratios, Complementary angles, Height and distances (simple problems only) Standard Identities like $\sin 2\theta + \cos 2\theta = 1$ etc.

Statistics and probability: Use of Tables and Graphs: Histogram, Frequency polygon, Bar-diagram, Pie-chart; Measures of central tendency: mean, median, mode, standard deviation; calculation of simple probabilities

b) (Reasoning and General Intelligence): Questions of both verbal and non-verbal type. These will include questions on Semantic Analogy, Symbolic operations, Symbolic/ Number Analogy, Trends, Figural Analogy, Space Orientation, Semantic Classification, Venn Diagrams, Symbolic/ Number Classification, Drawing inferences, Figural Classification, Punched hole/ pattern-folding & unfolding, Semantic Series, Figural Pattern-folding and completion, Number Series, Embedded figures, Figural Series, Critical Thinking, Problem Solving, Emotional Intelligence, Word Building, Social Intelligence, Coding and de-coding, Numerical operations, Other sub-topics, if any.

c) **(English Language And Comprehension):** Vocabulary, grammar, sentence structure, synonyms, antonyms and their correct usage; Spot the Error, Fill in the Blanks, Synonyms/ Homonyms, Antonyms, Spellings/ 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. To test comprehension, two or more paragraphs will be given and questions based on those will be asked. At least one paragraph should be a simple one based on a book or a story and the other paragraph should be based on current affairs editorial or a report.

d) **(General Awareness):** Questions are designed to test the candidates' general awareness of the environment around them and its application to society. Questions are also designed to test knowledge of current events and of such matters of everyday observation and experience in their scientific aspect as may be expected of an educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining to History, Culture, Geography, Economic Scene, General policy and scientific research.

e) **(Computer Knowledge Test) (Qualifying in Nature):**

Computer Basics: Organization of a computer, Central Processing Unit (CPU), input/ output devices, computer memory, memory organization, backup devices, PORTs, Windows Explorer, Keyboard shortcuts.

Software: Windows Operating system including basics of Microsoft Office like MS word, MS Excel and Power Point etc.

Working with Internet and e-mails: Web Browsing & Searching, Downloading & Uploading, Managing an E-mail Account, e-Banking.

Basics of networking and cyber security: Networking devices and protocols, Network and information security threats (like hacking, virus, worms, Trojan etc.) and preventive measures.

For VH candidates of 40% and above visual disability, there will be no component of Maps/ Graphs/ Diagrams/ Statistical Data in the Mathematical Abilities and Reasoning and General Intelligence modules.

Stage-II (Typing Test)

Instructions for (Typing Test)

Subject: Junior Secretariat Assistant [Post Code: 24] (Typing Test)

1. Kindly read the instructions carefully given in order to avoid disqualification, error and time loss. After reading the instructions carefully, click on the check box to proceed.

2. Displayed text on desktop computerize to be typed in **ENGLISH** or **HINDI** only as opted by the candidate in the online application form.

3. Typing Test is qualifying in nature as mentioned in the notification.

4. It is mandatory for all the shortlisted candidates who have qualified the Stage-I (Skill Test) to appear in Stage-II (Typing Speed) except those candidates who wish to exemption the typing test as per Para-9.5 and they will produce medical certificate in the prescribed format.

5. Candidates opting for English medium should have minimum typing speed of **35 w.p.m.** and for Hindi medium should have minimum typing speed of **30 w.p.m.**

6. Evaluation of English Typing Speed will be done on the basis of the following formula:

$$\text{Speed} = \frac{[(\text{Gross key strokes typed} \div 5) - (\text{incorrect words typed} \times 10)]}{10\ (\text{allotted time in minutes})}$$

None of incorrect word/mistake is to be ignored.

Example: for English, if Gross keystrokes typed = 1950
Incorrect words =5,
Alloted Time =10 minutes

Then,

$$\text{Speed} = \frac{[\ (1950 \div 5) - (5 \times 10)\ ]}{10} = 34 \text{ WPM}$$

Result: Not qualified as speed is less than 34 WPM.

7. हिंदी माध्यम टाइपिंग परीक्षा का मूल्यांकन निम्नलिखित फॉर्मूले के आधार पर किया जाएगा:

$$\text{स्पीड} = \frac{[(\text{टाईप किये गये कुल की-स्ट्रोक} \div 5) - (\text{टाईप किये गये कुल गलत शब्द} \times 10)]}{10 \text{ मिनट (दिया गया समय)}}$$

कोई भी अशुद्ध शब्द/गलती की अनदेखी नहीं की जायेगी।

उदाहरण :

टाईप किये गये कुल की-स्ट्रोक = 1650
गलत शब्द = 5
दिया गया समय = 10 मिनट

$$\text{स्पीड} = \frac{[(1650 \div 5) - (5 \times 10)]}{10} = 28 \text{ शब्द प्रति मिनट}$$

परिणाम: स्पीड 28 शब्द प्रति मिनट से कम होने पर पास नहीं किया जाएगा।

8. After candidate logs into the system, trial typing test will start and to be completed in **2 minutes** wherein candidate will check keyboard and keys operation. There will be break time of **10 minutes** after the trial test. If any candidate-system's keys are not working during this break time, they have to immediately report to the invigilator and get it resolved. The **Actual Typing Test** will begin after the break time as per the information given below. Typing Test will be for **10 minutes**.

Subject	**Exam Duration**	**Overall Duration for (Normal Candidates)**	**Duration for Scribe Candidates with Compensatory Time**
JSA (Typing Test)	2 min (Mock Test) + 10 min (Break Time) +10 min (Actual Typing Test) (5min extra time for Scribe Candidate)	22 Minutes	27 Minutes

9. The VH candidates will have to bring their own Passage Dictators for the Typing test

who have opted for scribe in the online Application Form. The Passage Dictator will read out the passage to VH candidate within the allotted time period.

10. Typing Test Keyboard Layout of English will be available in English (US) only and font will be Times New Roman.

    For English Typing Test–QWERTY Layout.

11. हिंदी के टाइपिंग टेस्ट के लिए फ़ॉन्ट **Mangal** होगा।कीबोर्ड लेआउट-**Remington Gail** में उपलब्ध होगा।

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SPECIAL INSTRUCTIONS TO BE KEPT IN MIND WHILE TYPING

12. Do not use special keys or any key at the time of the examination, which is not necessary for the typing of the words given in the displayed text. Do not type any special characters /symbols except those mentioned in the displayed text.

13. Typing Test will be held in **Unrestricted Mode**. In Unrestricted typing, candidates will be allowed to proceed with the typing test, even if content is typed incorrectly. The incorrect text will be highlighted in **RED colour** font in the original text that is displayed in the text box. The text that is typed correctly will be highlighted in **GREEN colour**.

14. The candidate has to type the word being highlighted in the displayed text without any errors. The word typed correctly will be highlighted in **GREEN colour** and word typed incorrectly will be highlighted in **RED colour** as explained in para above. All correct words typed will be highlighted in **GREEN** and all incorrect words typed will be highlighted in **RED**.

15. Each incorrect word highlighted in RED will be treated as one mistake and will be penalised with ten times weightage / multiplication factor as explained in evaluation criteria mentioned in para 6. None of the incorrect word (mistake) will be ignored. Therefore, candidates are advised to use Backspace key and Arrow keys to fix the incorrect word within typed text that is being highlighted in RED. Once the word is corrected the highlighted colour of that word will be turned in GREEN colour.

16. Please ensure that only the word being highlighted in the displayed text is typed. Typing any other word than the highlighted word or typing word subsequent to highlighted word in the displayed text will be treated as in correct word (mistake) even if the word itself is typed correctly. This/these incorrect word/words will be highlighted in RED colour. Therefore, candidates are advised to ensure that they type the word being highlighted in displayed text and nothing else.

17. **A link for MOCK TEST for typing may be made live *shortly* at DDA's official website i.e. dda.gov.in→ Jobs→latest Jobs→ Job Category → Direct Recruitment 2025 for candidates to get familiar with typing software as described above.**

18. Be patient during examinations and keep calm. You can contact the invigilator for any problem, such as:-

    a. Key-board error
    b. Machine automatic shutdown
    c. Power interruption
    d. Browser crash
    e. Artificially expiring session

19. Your candidature can be revoked if you disturb the peace or in some way disrupt the examination or adopt wrong methods/ using restricted electronic gadgets such as Bluetooth device, mobile phone, electronic watch, camera etc. and legal action may be taken against you too.

20. Clock has been installed on the server so the remaining time of the exam will be displayed in the countdown timer at the top right corner of your computer screen.

21. Typing test will be submitted automatically as per the given time.

22. Candidates will not be allowed to leave the Examination Hall until permitted to do so.

Don'ts

4. Don't use any **other key or key combination apart** from those that is required to type the given text.

5. Don't enter any special character/symbol other than mentioned in the provided text. (This could skip words, leads to typing error, could be evaluated as typing mistake).

6. Don't press back-space or any other key once the test is submitted and summary is displayed.

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➢ Mali — Post Code: 25

General Aptitude in Agriculture/ Horticulture (Matriculation Level)

- Kinds of Soil & Soil conservation
- Intercultural Practices of garden
- Water Harvesting

- Climate Change
- Classification of plants
- Minerals and nutrition of the plants
- Diseases: Bacteria/ Fungi/ Virus
- Tree, shrubs Herbs and their parks & function
- Weed control
- Instant and paste control
- Manure, fertilizer, vermi-compost & its applications
- Basic knowledge of vertical garden, floating garden
- Preparation of plants in nursery/ Seed bed
- How to reduce pollution from planting

Part-II:

(a) Test of reasoning
(b) Test of Quantitative Aptitude
(c) Test of General Awareness and
(d) Test of English Language
(e) Computer Knowledge

➢ MTS (Non-Min.) Post Code: 26

- **Numerical and Mathematical Ability:** It will include questions on problems relating to Integers and Whole Numbers, LCM and HCF, Decimals and Fractions, Relationship between numbers, Fundamental Arithmetic Operations and BODMAS, Percentage, Ratio and Proportions, Work and Time, Direct and inverse Proportions, Averages, Simple Interest, Profit and Loss, Discount, Area and Perimeter of Basic Geometric Figures, Distance and Time, Lines and Angles, Interpretation of simple Graphs and Data, Square and Square roots etc.
- **Reasoning Ability and Problem Solving:** The questions in this part intend to measure the candidates' general learning ability. The questions will be broadly based on Alpha-Numeric Series, Coding and Decoding, Analogy, Following Directions, Similarities and Differences, Jumbling, Problem Solving and Analysis, Non-verbal Reasoning based on diagrams, age Calculations, Calendar and Clock, etc.
- **General Awareness:** The broad coverage of the test will be on Social Studies (History, Geography, Art and Culture, Civics, Economics), General Science and Environmental studies up to 10th Standard.
- **English Language and Comprehension:** Candidates' understanding of the basics of English Language, its vocabulary, grammar, sentence structure, synonyms, antonyms and its correct

usage, etc. and to test comprehension, a simple paragraph may be given and question based Page 18 of 81 on the paragraph to be asked.

- **Computer Knowledge:** Computer Fundamental Section, Keyboard Shortcut key & Internet, MS Word, MS Excel, MS Power Point, etc.

For VH candidates of 40% and above visual disability, there will be no component of Maps/Graphs/Diagrams/Statistical Data in the Paper.

************End**************