SYLLABUS

Name of Post – Assistant Draftsman

[Total Marks = 100, Duration – 2 Hrs]

Section – A

S. No.	Subject	Marks
1	General Information	15
2	Knowledge of Computer	10
	Total	**25**

Section – B

S. No.	Subject	Marks
1	Syllabus for Technical Subject	75
	Total	**75**

Section - A

Syllabus for Post – Assistant Draftsman

Total Questions -15
Total Marks - 15

1. General Information:-

- General knowledge, Mental ability. Current Event, Sports (National & International), Chhattisgarh General Information.

Total Questions -10
Total Marks - 10

2. Knowledge of Computer :-

- MS Office, Spread sheets, word Processing etc.
- Concept of hardware and software, operating system, windows etc
- Data analysis and chart presentation.
- Multimedia/graphic presentation.
- Basic of internet and cloud computing.
- Introduction of CAD, Its graphic user Interface, Method of Installation, Basic commands of CAD.

Section - B

Technical Ability

Total Questions -75
Total Marks - 75

1. Drawing:-

List of Instruments, equipments and materials to be used during drawing. Techniques of use of instruments. Scale- Types of Scale, R.F. Importance of B.I.S introduction of Code of Practice for Architectural and Building Drawing (IS:962-1989). History of Indian Architecture, Orders of Architecture, Layout of drawing, Lines, Lettering, Dimensioning, Scales and Projection. Projections orthographic (Line, Plane, Solid in isometric, Oblique) and Perspective. Symbols & conventional representation for materials in sections as per IS 962-1989 for building drawings, Geometrical construction, Technical sketching.

2. Building Construction Materials :-

Components of a building Materials Rocks, Stones, Bricks, Lime, Cement, Clay Products, Mortar, Concrete, Timber, Admixture, Protective Materials, Paint, Varnishes, Metal, Plastics. Building Construction, Stone masonry, Brick masonry, Hollow block construction, Composite masonry, Masonry tools, Types of Foundation & its requirement, Soil bearing capacity, Permanent & temporary structures. Treatments for building

structure, DPC, Damp proofing materials, Anti-termite treatment, Weathering course, Fire-proofing, Arches, Lintel. Carpentry joints terms, Doors, Windows, Ventilators, Floors, Flooring, Stairs, Roofs & Roof coverings, Truss, Shell.

3. **Building Planning:-**

Economy and orientation, Provision for lighting and ventilation, Provision for drainage and sanitation, Classification of buildings, planning & design of residential, public and commercial building, Concept of design of earthquake resisting buildings. Concepts of design of earthquake resisting buildings,

4. **House drainage of building:-**

Introduction, Terms used in PHE, Systems of Sanitation, System of house drainage, plumbing, sanitary fittings etc. Purification of water, Types of sewer appurtenance, Systems of plumbing, Manholes & Septic tank, New technology of Plumbing.

5. **Road, Rail & Bridge :-**

Introduction, History of highway development, General principles of alignment, Classification and construction of different types of roads, Component parts, Road curves & gradient, Curves- types, designation of curves, Setting out simple curve by successive bisection from long chords, simple curve by offsets from long chords.

Rail gauges, functions, Requirements, Types, Sections, Length of rail. Welding of rail, wear of rail, Coning of wheels, Hogged rail, Bending of rail. Creep of rail. Causes and prevention of creep, Sleeper and ballast- function, types, requirement, materials, rail, Fixtures, fastenings and plate, fish bolt, spikes, chairs and keys bearing plate, block, elastic, base plate. Anchors and anti-creepers. Construction of permanent ways.

Introduction of Bridge, Classification of bridge. Selection of type and location, Factors governing the ideal site. Alignment of bridge, Foundation- selection, caisson, Coffer dam types. Types of super structure, Substructure- piers, abutments, wing walls.

6. **Irrigation Engineering :-**

Terms used in irrigation. Hydrology like duty, delta, baseperiod, intensity of irrigation, hydrograph, peak flow, run off, catchment area. Corps like- rabi, kharif etc. Storage/ diversion head work definition: types. Reservoirs-types of reservoirs, area, and capacity of reservoir. Dams, weir & barrage types purposes, Hydro electric project. Canals-classification & distribution system, canal structures. Types of cross drainage works.

7. **Estimating & Costing :-**

Purpose and common techniques, Construction drawing, Measurement techniques, Estimate-necessity, importance, types-approximate and detailed estimate-main and sub estimates, revised, supplementary. maintenance/repair estimate-taking off quantities- method, Rate analysis and Specifications, Labour and materials, Schedule of rate, Estimating of irregular boundaries by trapezoidal and Simpsons formulae.

8. **Surveying :-**

Introduction, History & Principle, Common terms used and definitions, Classification of survey, signs & symbols, accuracy, Main divisions (plane & geodetic), Chain Survey, Compass Survey, Bearing & Meridian. Use of Plani meter and Pantagraph, use of field book. Study of Toposheet of different scale, Projection of Toposheet, Interpretation, extraction of data.

Levelling :-

Auto level introduction, definition, Principle of levelling, Levelling staffs, Temporary and permanent adjustment, procedure in setting up, Level & horizontal surface, Datum, MSL, Benchmark, Focussing & Parallax, Deduction of levels, Types levelling, Direct and Indirect methods,

Contouring-

Definition, Characteristics, Method, Interpolation of contour.

Theodolite:-

Theodolite Survey, Types technical terms, horizontal and vertical angle, temporary and permanent adjustment, Latitude & departure, Consecutive Co-ordinate & Independent co-ordinates, Traverse system,

9. **GPS :-**

Introduction of GPS system, Co-ordinate and time system. Satellite and conversional geodetic system. GPS- Signal, code and biases. Definition and application of remote sensing. Photogrammetry Arial photography satellite images, Pattern recognition and digital signal.