

TENTATIVE SYLLABUS OF
JUNIOR INSTRUCTOR
ARCHITECTURAL DRAFTSMAN

Industrial Training Department
CATEGORY NO: 651/2023

✔ **ELEMENTS AND PRINCIPLES OF ARCHITECTURE - 10 MARKS**

- Primary elements of design – point, line, plane and volume
- Colour – Colour wheel, colour schemes
- Texture – Rough and smooth texture
- Principles of composition – Balance, rhythm, proportion, scale, contrast, unity and character

✔ **ARCHITECTURAL SPACE AND DESIGN METHODOLOGY – 10 MARKS**

- Steps involved in architectural design process – Program analysis, preliminary studies, intermediate studies and presentation drawings.
- Elements and factors of climate, comfort factors.
- Positioning of doors and windows with respect to lighting and ventilation.
- Rules and regulations – NBC, KMBR and CRZ

✔ **BASICS OF DRAFTING**

10 MARKS

- Drafting instruments and media of presentations.
- Orthographic projection.
- Conventional symbols and scales.
- Dimensioning and specification.
- Three dimensional views, rendering.
- Preparation of sanction Drawing.
- CAD system components – application of CAD in 2D and 3D drawings, Basics of 3D modelling.

✔ **SURVEYING**

10 MARKS

- Surveying instruments, Chain survey – operations involved in chain survey to make site plan, Plane table survey – advantages and disadvantages,
- Levelling – Classification of levelling, Compute the reduced levels of station from field book, Theodolite surveying – horizontal angle measurement by repetition and reiteration method. Steps involved in setting out angles using a theodolite. Conduct traverse survey in the field using the theodolite. Compute the co-ordinates and Total Station.

✔ **CONSTRUCTION MATERIALS**

10 MARKS

- Stone, clay, lime, cement, aggregates, concrete, wood and metals.
- Plastics, Rubber, Aluminum, Glass, Paints, Varnishes.
- Masonry, DPC, Plastering and pointing

✔ **CONSTRUCTION TECHNOLOGY**

10 MARKS

- Components of a building – Footing, basement, super structure.
- Lintels and arches. Types of roofs and ceiling.
- Sunshades, canopy and sun breakers.
- Staircase, lift, escalators and ramp.
- Structural systems – Load bearing and framed structures, singly reinforced beams, lintels, doubly reinforced beams and flanged beams, One way slab and two way slab,
- Cost effective technologies and methods in construction.

✔ **SUSTAINABLE PLANNING & DESIGN – 10 MARKS**

- Global environment and effects of climate change, principles of sustainability, Principles to improve the energy efficiency, Concept of green building – green building rating systems.

✔ **THEORY OF STRUCTURES 10 MARKS**

- Forces and moments – Centre of gravity, Moment of inertia.
- Mechanical properties of materials – Temperature stresses, strain energy.
- Beams and bending – Torsion of circular shafts, Theory of simple bending.

✔ **HISTORY OF ARCHITECTURE 10 MARKS**

- Indian – Ancient Architecture – Indus valley civilization and vedic culture, Buddhist – stupa, stambha, chaitya halls and viharas – Hindu style – North Indian Temples,

central Hindu temples & south Indian temples – Indo Islamic Architecture – Imperial and Mughal style, Kerala Architecture – Characteristic features and materials, typical layout of temple, types of traditional houses – Modern Architecture after Independence, Works of Laurie Baker, Charles Correa and B V Dhoshi.

- World Architecture – Works of masters in Architecture – Louis Sullivan, Frank Lloyd Wright, Le Corbusier and Mies Van der Rohe, Works of modern architects – Frank Gehry, Zaha Hadid

✔ **CONSTRUCTION MANAGEMENT** **10 MARKS**

- Planning and scheduling of construction projects – Application of project management tools,
- Purpose of preparing feasibility report and project report.
- Organizational structure of construction firms.
- Aspects of project execution – Types of tenders and contract,
- Methods of tendering, Agreement.
- Estimation – Types of estimates, Importance of specification,

- Quality Control – Importance of supervision, material testing, measurements, various quality management systems.
- Basic principles of safety at construction site.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper

THANK YOU



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