Syllabus for M.Arch/ M. Ekistics Entrance Test

City Planning: Origin and growth of Human Settlement. Biological and behavioral responses to human settlement Role of River Banks in growth of human settlement. Western world, River valley settlements. Greek, Roman, Medieval, Renaissance and modern, principles of Ekistics Linear, Radial and Grid Iron layout patterns. Planning theories of the twentieth century. Industrial revolution and modern city. Garden City. Satellite town Current theories on Physical Planning. Socio-economic Dynamics of Urbanization. Methodology of conducting town planning, surveys and analysis of data, collected, use of G.I.S. Preparation of Master plans. Zoning and development controls Building byelaws; sustainable development.

Traffic Characteristics: Composition, speed, volume and direction of movement. Urban road systems and geometry. Capacity of roads and intersections

Housing: Concept of housing; neighborhood concept; site planning principles; housing typology; housing standards; housing infrastructure; housing policies, finance and management; housing programs in India; self help housing.

Landscape Design: Site study and analysis, Site planning principles. Contour interpretation and slope analysis, principles and elements of landscape designs, study of landscape features and their use to contemporary landscape projects, understanding of construction detail and use of material in landscape features. History of landscape styles, plant materials; Types, names of familiar plants and their characteristics.

Computer Applications in Architecture: Introduction to various softwares available for documentation, presentation & Drawing purpose. Introduction to Auto CAD: Basic 2D commands their function and application. Layers and Colors. Understanding of commands line, pline, spline, x-ref, attributes, model space, paper space etc. introduction to basic 3D commands, Introduction to Revit. Basic working commands for Adobe Photoshop, Corel Draw, 3D Max as applications helpful in architectural commands.

Environmental Studies in Building Science: Components of Ecosystem; ecological principles concerning environment; climate responsive design; energy efficient building design; thermal comfort; solar architecture; principles of lighting and styles for illumination; basic principles of architectural acoustics; environment pollution, their control & abatement.

Visual and Urban Design: Principles of visual composition; proportion, scale, rhythm, symmetry, harmony, datum, balance, form, colour, texture; sense of place and space, division of space; barrier free design; focal point, vista, image ability, visual survey, figure background relationship.

History of Architecture: Indian – Indus valley, Vedic, Buddhist, Indo-Aryan, Dravidian and Mughal periods; European – Egyptian, Greek, Roman, medieval and renaissance periods construction and architectural styles; vernacular and traditional architecture.

Development of Contemporary Architecture: Architectural developments and impacts on society since industrial revolution; influence of modern art on architecture; works of national and international architects; art neuveau, eclecticism, international styles, post modernism, deconstruction in architecture.

Building Services: Water supply, sewerage and drainage systems; sanitary fittings and fixtures; plumbing systems, principles of internal & external drainage systems, principles of electrification of buildings, intelligent buildings; elevators & escalators, their standards and uses; air conditioning systems; fire fighting systems, building safety and security systems.

Building Construction and Management: Building construction techniques, methods and details; building

systems and prefabrication of building elements; principles of modular coordination; estimation, specification, valuation, professional practice; project management techniques e.g., PERT, CPM etc:

Structural Systems : Elements of Earthquake Engineering, zoning, base shear, Lateral forces, synthesis of force systems to create Structural system. Vector Active, Surface Active and Bulk Active systems. Theory of Folded Plates, Domes, Shell, Vault, Space Frame, Flat Slabs, Hollow Floor, Portal Frame, Cables and Suspension Structures. Structure System for Seismic Zone Inflatable Structure, principles of pre-stressing; Pre-tensioning and Post Tensioning of Concrete members.

Infrastructure, Services and Amenities: Principles of water supply and sanitation systems; water treatment; solid waste disposal systems; waste treatment, recycle & reuse; urban rainwater harvesting; power supply and communication systems — network, design & guidelines; demography related standards at various levels of the settlements for health, education, recreation, religious & public-semi public facilities.

Development Administration and Management: Planning laws; development control and zoning regulations; laws relating to land acquisition; development enforcements, urban land ceiling; land management techniques; planning and municipal administration; disaster mitigation management; 73rd & 74th Constitutional amendments; valuation & taxation; revenue resources and fiscal management; publicparticipation and role of NGO & CBO; Institutional networking & capacity building.