

# **Syllabus for Online Entrance Examination – Doctoral Programme** **(Academic Year 2021-22)**

## **Department of Planning**

### **Section (A):**

**(Weightage: 75%)**

#### **(i) Planning Principles and Techniques**

Concepts, theories and principles of urban and regional planning; Rational Planning Approaches and Models; Recent and contemporary contributions to the changing planning paradigms; Types of plans – Master Plan, City Development Plan, Structure Plan, Zonal Plan, Action Area Plan, Town Planning Scheme, Regional Plan, Metropolitan Plan;

#### **(ii) Urban Planning**

Urban Planning process; Land use Planning – Zonal/sub-city level; Urban Land Economics; Emerging concepts of cities – Eco-City, Smart City, Transit Oriented Development (TOD), SEZ, SRZ etc.; Law of demand and supply of land and its use in planning; Metropolitan Area Planning; Urban renewal and conservation; Site planning; Planning & Management of Informal Sector.

#### **(iii) Regional Planning**

Regions, city region; Regional Economics; Techniques of delineation of regions; Regional Analysis; Models of regional development; Intra-urban and inter-urban inequalities; Metropolises and its Region; Rural Planning; Approaches to rural development in India; Five year Plans and rural development; Sustainable rural development.

#### **(iv) Environmental Planning**

Ecosystem- natural and man-made ecosystem; Ecological principles; Concepts of Environmental Impact Analysis; Environmental considerations in planning and design; Water sensitive Urban Development; Environmental pollution- types, causes, controls and abatement strategies; Planning for Disaster Management; Ecological zoning, Ecologically sensitive areas, Coastal Zone Regulations; Principles of Sustainable Development.

#### **(v) Housing**

Housing; Concepts, principles and examples of neighbourhood; 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; Real Estate Planning & Management.

#### **(vi) Transportation Planning**

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

#### **(vii) Infrastructure Planning**

Physical Infrastructure: Water Supply, Sewerage, Drainage, Solid Waste Management, Electricity and Communications; Principles of water supply and sanitation systems; water treatment; Water supply and distribution system; Water harvesting systems; Principles, Planning of storm water drainage system; Sewage disposal methods; Methods of solid waste management – collection,

transportation and disposal; Recycling and Reuse of solid waste; Power Supply and Communication Systems, network, and guidelines.

Social Infrastructure including Health, Education, Recreation facilities, Civic Amenities, Distributional services, etc.; Economic Infrastructure; Spatial data as infrastructure; Impact of technology on infrastructure.

**(viii) Planning Legislation and Public Policy**

Planning Legislation and implementation – including development control and zoning regulations; laws relating to land acquisition.; Local self-governance; urban land ceiling; land management techniques; planning and municipal administration; disaster mitigation management; 73rd & 74th Constitutional amendments; Development guidelines such as URDPFI; public participation and role of NGO & CBO; Institutional networking & capacity building.

**(ix) Project Formulation & Implementation**

Planning Project formulation; Projects and planning issues; Approaches of appraisal; Techniques of financial appraisal; Project management; Project implementation, monitoring and evaluation; Management of Infrastructure Projects; Social, Economical and environmental cost benefit analysis.

**(x) Arithmetic & Analytical Ability**

Logical Reasoning; Aptitude; Basic calculations using visual and numerical problems pertaining to urban and regional planning.

**(Xi) People Economy And Space**

Society, Culture, Identity; Community; Socialization and Social Institutions: Social structure and physical form of Built Environment. Social Transformations and Globalization; Social and spatial Mobility – Rural and Urban Transformation, Planned Development and Society- Decentralization - Participatory approach and Sustainable development. Economics and Development - Balanced & Unbalanced Growth, Poverty and Inequalities – Rural & Urban Economic Development – Public-Private Partnerships,, Green economics and Sustainable development. Composition and structure of the atmosphere, Forms and functions of ecosystem; Conservation and management of ecosystems; Growth and density of population; Patterns and processes of migration; Demographic transition, Social and Cultural Geography, Techniques for the study of spatial patterns of distribution;

## **Department of Architecture**

### **Section (A):**

**(Weightage: 75%)**

#### **The broad topics covered would be:**

- Sustainable Architecture (Inclusive of Building Science and Climate-Responsive Architecture)
- Landscape Architecture
- Architectural Conservation
- Building Engineering Management
- Urban Design
- General Architecture

### **Section (B):**

**(Weightage: 25%)**

#### **Common for both Department of Planning and Department of Architecture**

#### **Knowledge of Research-Methods and Technical Writing:**

Introduction, definition, objectives and characteristic of research; Meaning of PhD, need, significance of PhD; Scientific method in research and basic postulates of scientific method; Types of research, descriptive vs analytical, applied vs fundamental, quantitative vs qualitative, conceptual vs empirical; Articulating enquiry and framing research questions in research; Research process problem formulation, literature survey, preparation of research design, determination of sample, data collection and analysis, generalisation and interpretation. Preparation of Report/Thesis prefatory part, main body, supplementary part, referencing and bibliography.