

ASSAM PUBLIC SERVICE COMMISSION
JAWAHARNAGAR, KHANAPARA, GUWAHATI-22

SYLLABUS
(Degree Standard)

Syllabus for screening test (OMR Based) for Recruitment to the post of Assistant Architect under PW (Buildings & NH) Department of Govt. of Assam. The educational standard is of degree standard.

Full Marks: 100
Time: 2(two) hours

Section-A: General Studies

(Multiple Choice Objective Type Questions)

- i. Current Events of National & International importance.
- ii. History of India & History of Assam
- iii. World Geography including India & Assam.
- iv. Indian Economy, Indian National Movement.
- v. Mental Ability
- vi. Role and Impact of Science & Technology in India.
- vii. Indian Polity, Political System of India.
- viii. Indian Culture.

Full Marks: 100
Time: 2(Two) hours

Section – B: Assistant Architecture:

(Multiple Choice Objective type questions)

1. THEORIES OF ARCHITECTURE/DESIGN PRINCIPLES

- Definition of Architecture, Architectural design – an Integration of aesthetic and function, Aesthetic components – Proportion, Scale, balance, rhythm, symmetry, hierarchy, pattern and axis.
- Functional aspects of Architecture – site, structure, skin, circulation etc.
- Effect of colour- colour symbolism, Impact on interiors, exteriors and at city level.
- Elements of Architecture and their relationships.

2. HISTORY OF ARCHITECTURE

- Factors influencing Architecture of an era.
- Architectural character of Egypt, West Asia, Greece, Rome, Italy, France and England from 3rd Century B.C to 18th Century A.D and Modern Architecture.
- Outstanding examples of these periods with salient architectural features.
- Evolution of Hindu Temple and Architectural contributions of Dravidian, Pallava, Chola, Pandya and Indo-Aryan Periods – outstanding examples of these periods.
- Development of Islamic Architecture and contributions during the rule Humayun, Akbar, Jahangir, Shahjahan in India.
- Development of Indo – Saarcenic architecture – Design of New Delhi – Contributions by Le Corbusier and Louis Kahn in India.

- Contributions by B.V. Doshi, Charles Correa, Kanvide and Nari Gandhi to Indian Architecture – Examples and philosophies.

3. MATERIALS AND CONSTRUCTION TECHNIQUES

- Advantages and disadvantages of concrete as a building material – properties – types and variety.
- Ferrous metals – uses of cast iron, wrought iron and steel in buildings – structural steel – stainless steel – steel alloys – steel as a roofing material.
- Thermal insulation – blanket, poured and reflective insulation – properties and uses of spun glass, foamed glass, cork, vegetable fibers, mineral fibers, foamed plastics, vermiculite and glass fibers.
- Timber – Quality of timber used in buildings, defects, seasoning and preservation of timber. Types – Natural, hard and softwood.

4. BUILDING SYSTEM AND SERVICES

- Fundamentals of Sanitary waste and sewerage system – Basic principles of sanitation and disposal of waste matter from buildings, various sewerage disposal and their principles. Intercepting chambers, inspection chambers – their location and ventilation of sewers. Alignment of storm water drains in housing, layout and cities, collection, conveyance and disposal of town refuse. Rural sanitation.
- Water distribution systems – Water distribution systems in small towns, criteria to assess daily water requirements, Testing for water hardness, piping systems for residential and multi storied buildings.
- Types of pumps – Reciprocating, centrifugal deepwell, submersible automatic pumps, sewerage pump, compressors vacuum pump.
- Elevators – size, capacity, speed, mechanical safety method, Types of elevators - Electric, hydraulic passenger, hospital, capsule, freight, etc. Dumb waiters, Parallel and criss cross escalators, horizontal belt.
- Conveyors, horizontal moving walkways, physically handicapped mechanical safety systems.
- Electrical services – types of wires, wiring systems and their choice, Planning electrical wiring for building, types of earthing, main and distribution boards.
- Refrigeration and Air conditioning- Window type and packaged air conditioners, chilled water plant, fan coil systems, Air conditioning systems for different types of buildings.
- Fire safety – Fire detection system, Fire Alarm system, Fire Fighting systems, Dry and wet risers, Automatic Sprinklers.

5. TRADITIONAL AND CULTURE STUDIES

- Traditional Site planning method – Orientation of building, site, layout and settlement, positive and negative energies, importance of cardinal and ordinal directions.
- Vernacular Architecture – Approaches and concepts to the study of Vernacular Architecture – Aesthetic, Anthropological, Architectural, Geographical, Historical, Spatial, Folkloristic. Colonial influences on the Traditional House & Bungalow.

6. URBAN STUDIES

- Definitions of Conservation, preservation, urban design and renewal, Need in the Indian Context. Land use structures of cities, impact of urbanization, developmental programmes and social development.

- Urban design concepts – Imagability, life between buildings, transit metropolis, sustainable cities, generic cities, heritage tourism, community participation in urban design.
- Urban open spaces and urban landscape, street landscaping.
- Post Independence Urban Design in India – Influence of Chandigarh, Bhubaneswar and Gandhi Nagar.

7. ENVIRONMENTAL STUDIES

- Land resources – Land as a resource, land degradation, landslides, soil erosion and desertification, waste land reclamation.
- Landscape and ecology – Introduction to landscape architecture, ecology, ecological balance, landscape conservation, reclamation and landscaping of derelict lands.
- Site analysis – Importance of site analysis, on site and off site factors involved, topography, hydrology, soils, vegetation, climate, surface drainage, accessibility, infrastructure.
- Energy resources – growing energy needs, renewable and non-renewable energy sources, alternate energy. Urban problems related to energy.
- Simple passive design considerations – use of site conditions, orientation, plan form, envelope design, opening size and position to achieve solar passive architecture.
- Waste Management – Solid waste recycling, such as composting, vermin composting and bio gas. Liquid waste recycling, Rain water harvesting, Biological and thermal energy options.

8. URBAN AND RURAL HOUSING

- Urban Housing – Housing and its importance in architecture. Its relationship to neighborhood and city planning. Housing need and demand – National Housing Policy – Housing Agencies and their role in housing development.
- Housing Design – housing typologies, integration of services, parking, sustainable practices, Qualitative aspects of housing, prefabrication in housing.
- Rural housing – influence of urbanization and changing life style, Uniqueness of rural housing – mud as a building material – Soil stabilization, Bamboo, Casuarina, Coconut, Palm, Hay, uses as building materials – fire retardant treatment, insect proofing. Building stones – types of masonry.

9. RULES, REGULATIONS AND LEGAL FRAME WORK

- Zonal regulations – Zoning, planned Unit Development, SEZ.
- Development Control rules – Significance, rules for various building types.
- National building code of India – Fire safety, ventilation, Mechanical services such as lifts and escalators.
- Environmental Laws in India – protection of land, forest, water and air.
- Green Building concepts and regulations.

10. CURRENT TRENDS AND ISSUES

- Technology – Computer oriented 2D and 3D drafting. Use of digital medium for designing and presentation.
- Use of GIS for regional planning and Urban Governance.
- Role of Information Technology in Environmental Protection and human health.
- Impact of GATT and WTO on Architecture on India.

- Significance of “Intellectual property rights” for architects in India.
- Use of “Right to Information” as a powerful tool for architects.
- Mandatory rules to incorporate “Barrier free design”



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