

BHARATI VIDYAPEETH
(DEEMED TO BE UNIVERSITY), PUNE, INDIA
PhD Entrance Test – 2023
SECTION-II: Architecture - 35 Marks

NOTE:

**The syllabus is based on 5 year B.Arch architecture course prescribed by COA 2017 guidelines.
Five questions of 10 Marks each will be asked on the overall syllabus**

Section – II

Unit No.	Syllabus
1	<p>BUILDING MATERIALS AND CONSTRUCTION</p> <p>Properties and behavior of both natural and man-made building materials such as bricks, stones, metals, timber, glass, steel and finishing materials in contemporary buildings; Application of these materials in construction; Effects of sun, rain, wind and other climatic and environmental conditions on various building materials and built environment and the science of design for creating effective human comfort conditions within the built environment. understanding of parameters like U-factor, R-value, Thermal mass, Solar heat gain coefficient (SHGC), Visible light transmittance (VLT), etc.</p> <p>Traditional and conventional knowledge systems that enable construction of a complete building; various structural systems and methods of construction and detailing of buildings of medium complexity using natural and manmade materials including foundation, walls, roofs, staircase, joinery, and finishes; Technology that informs the construction of contemporary buildings using various structural systems and materials</p>
2	<p>CLIMATOLOGY AND BUILDING SERVICES</p> <p>Climatology as a science for the study of weather conditions averaged over a period of time; the elements of climate; study of human comfort; design of solar shading devices; Heat flow through building envelopes; Air movement due to natural and built form; Design strategies in different climate zones; vernacular and contemporary responses to climate, Concept of sustainability and Green buildings.</p> <p>Study of and design and detailing for water supply, drainage, sewage disposal, garbage disposal, electrification, illumination, air conditioning, fire hazard protection, acoustical treatment, rainwater harvesting, etc. in buildings and building premises, disaster management systems, intelligent energy conservation systems, electronic security and surveillance systems for buildings, etc.; compliance requirements w.r.t. National Building Code and Energy Conservation Building Code.</p> <p>Science of sound; conditions for good hearing; appropriate materials for sound insulation; approaches in history for acoustic planning; planning for good hearing conditions in auditoriums, classrooms, churches and halls, conference rooms, etc.</p>
3	<p>CULTURE, ARCHITECTURE AND HUMAN SETTLEMENT PLANNING</p> <p>Architecture as evolving within specific cultural contexts including aspects of politics, society, religion, climate; geography and geology, etc. Development of architectural form with reference to Technology, Style and Character. Vernacular architecture as a process and not a product; Determinants of vernacular form; Overview of the various approaches and concepts to the study of vernacular architecture;</p> <p>Urban design as a discipline; Components of a city and their interdependent roles; Determinants of urban form; Evolution of historic urban form.; Theories and illustrations of Urban design and the interpretation of the urban form in different ways and layers; Identity and ‘place’ making; architectural codes and imageability; contemporary urban issues;</p>

	sustainable urban design. Elements and characteristics of human settlements; origins; determinants and their evolution through the course of history; Settlements as expression of political aspirations; Various planning concepts in urban, rural and regional level development plans; Housing issues and design typologies.
4	LANDSCAPE, SITE PLANNING AND ARCHITECTURAL CONSERVATION Man and Nature; Landscape traditions; Elements and principles of landscape design; Aspects of outdoor design and site planning in enhancing and improving the quality of building environs, functionally and aesthetically; Site structure relationship; Analytic, artistic and technical aspects of designing open spaces at different scales; Role of Landscape design in sustainability. Site and its content in architectural creations; Influencing factors which governs the siting of a building or group of buildings in a given site; Topography analysis; Scientific techniques of site analysis- case studies; Methodology of preparing a site analysis diagram and mapping; Codes and building regulations; Site utilities and Infrastructure planning. Various issues and practices of Conservation; values and ethics; status of conservation and the various agencies involved in the field of conservation worldwide and their policies; various guidelines for the preservation, conservation and restoration of buildings; management of historic sites; study of various charters; character and issues in our heritage towns through case studies; Role of INTACH, UNESCO, ICOMOS and other such organization.
5	ARCHITECTURAL DESIGN AND THEORY The understanding the elements and principles of design as the building blocks of creative design. Principles and percepts of issues as related to architectural design in theory and practice; Appreciation of architecture with respect to man and his behavior; Nature and Design; Principles of organization on Nature; Ideas and Intent in design - Intuitive, contextual, Iconic, Experiential, Environmental, Energy based, Symbolic, Modular; Ideologies/ philosophies from the practice of architecture through contemporary history; design communication through graphics.

Books: Indicative list

1.	ASHRAE Handbook.
2.	A Primer on Theory on Architecture by Karen Spence
3.	Rapoport, A. (1969), House Form and Culture, Prentice-Hall, Englewood Cliffs, NJ.
4.	A History of Architecture, Sir Banister Fletcher
5.	Kostof, Spiro, The City Shaped: Urban Patterns and Meanings Through History, Second edition, Thames & Hudson, New York 1999
6.	Starke .B and Simonds. J. O. (2013) Landscape Architecture: A Manual of Site Planning and Design. McGraw-Hill Professional
7.	Alexander, Christopher, et al. A pattern Language: Towns Buildings, Construction, Oxford 1977
8	Manual of tropical housing and building – Koenigsberger et al, Orient Longman, 1973.
9	Building Construction Handbook by Roy Chudley
10	Building Services, Technology and Design By Roger Greeno.

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