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***B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022***

**AR 1702 URBAN DESIGN
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

**PART A
(Answer ALL questions)**

(8 × 5 = 40)

- I. Write short notes on the following:
- Objectives of urban design.
 - Nodes and Landmarks.
 - Urban form and pattern.
 - Urban renewal.
 - Urban design surveys.
 - Serial vision.
 - Christopher Alexander's theory of Urban design.
 - Urban conservation.

PART B

(4 × 15 = 60)

- II. What are the scope and objectives of urban design? Explain the need for urban design in contemporary India.
- OR**
- III. Distinguish between Architecture, Urban design and Urban planning. Explain the level of interaction between these fields in shaping urban areas.
- IV. Explain the 'Image of the city' and its elements according to the principles of Kevin Lynch.
- OR**
- V. Describe the principles of urban spatial structure.
- VI. Quoting an example, explain the process of visual survey in urban design.
- OR**
- VII. Explain Figure ground theory, Linkage theory and Place Theory.
- VIII. Explain Urban conservation and economic considerations for heritage management.
- OR**
- IX. What are the important principles to be considered while formulating urban design policies at national level scale?

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***B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022***

**AR 1703 HOUSING
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

**PART A
(Answer ALL questions)**

(8 × 5 = 40)

- I. Write short notes on the following:
- Status of urbanization in India.
 - Estimation of housing shortage.
 - RAY.
 - Characteristics of rural housing.
 - Elements of Housing Policy.
 - Aided self-help housing.
 - Housing finance companies.
 - National housing bank.

PART B

(4 × 15 = 60)

- II. Discuss various issues of housing in urban India.
OR
- III. Discuss the approaches to housing under various five year plans in India.
- IV. Discuss different housing programmes of government of India from the year 2000 onwards to mitigate the housing shortage.
OR
- V. Review the various approaches adopted in India for improving the quality of life in slums.
- VI. Discuss the initiatives of NGO'S in providing housing for the poor.
OR
- VII. What is the need for a National Housing Policy? What are the major objectives of the National Urban Housing and Habitat Policy 2007 and National Urban Rental Housing Policy (draft) 2015?
- VIII. Discuss the evolution of housing finance in India.
OR
- IX. Which are the major housing finance institutions in India? Discuss any two of them in detail.

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**B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022**

AR1704 INTERIOR DESIGN

(2014 Scheme)

Time: 4 Hours

Maximum Marks: 100

(One drawing sheet and butter sheet must be supplied)

PART A

(Answer ALL questions)

(8 × 5 = 40)

- I. Write short notes on the following:
- Proportion and Ratio in Interior Design.
 - Texture in interior design
 - Color in interiors.
 - Vertical garden.
 - Ergonomics.
 - Role of furnishing in interiors.
 - Interior plantscaping.
 - Material finishes for flooring.

PART B

(1 × 60 = 60)

- II. Design an interior of Architecture student's bed cum study.
The room space accommodates the following: - a lot of semi-open spaces for model making and painting need to be provided which is his hobby. He has acquired many magazines and books. He has a number of drawing sheets, models, and portfolios and he has a semi-open space and open yard.
Basic requirements:

- A bed space.
- Bookshelf and study table
- Roll pack, rolled sheets, pen, pencil, etc
- Cloth storage.

Quality of spaces

- Bedroom space 18-20 sqm
- Semi-open spaces or verandah 12-15 sqm

Drawing Required

- | | |
|---|------|
| (i) Plans with furniture layout 1:20. | (20) |
| (ii) Sectional elevation. | (10) |
| (iii) Essential views. | (10) |
| (iv) Detailed furniture design of any two items of your choice. | (20) |

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**B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022**

**AR 1705 DESIGN ASPECTS OF EARTHQUAKE RESISTANT STRUCTURES
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

**PART A
(Answer ALL questions)**

(8 × 5 = 40)

- I. (a) Why does a building constructed on loose soil collapse during earthquake?
(b) Explain the terms.
(i) Degree of Freedom.
(ii) Mode Shape.
(c) Different modal combination techniques recommended for estimating lateral forces.
(d) Write down the equation used for determining Base Shear and explain each term.
(e) Write note on factors affecting ductility.
(f) Sketch the detailing of Beam Reinforcement as per IS 13920.
(g) Explain the Applications of Base Isolation.
(h) Briefly explain the advantages and disadvantages of seismic isolation system.

PART B

(4 × 15 = 60)

- II. Explain Lateral Load Resisting Systems with a neat sketch.
OR
III. Explain the various types of Non-Structural component damages observed during earthquake.
IV. Explain the step-by-step procedure to obtain the design seismic forces, in multi-storeyed framed structure using Response Spectrum Method as per IS 1893 (Part-1).
OR
V. Explain how the design seismic forces in multi-storeyed structure are computed using Time History Analysis. Also mention its merits and demerits.
VI. Draw the ductile detailing provisions of an RC column as per the IS code of practice and also explain the salient features as per IS13920.
OR
VII. Explain the Assessment of ductile detailing. Also explain the impact of ductility in a structure in detail.
VIII. Explain the Concept and Principle of Seismic Isolation System.
OR
IX. Explain the different types of seismic isolators with neat sketch.

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**B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022**

**AR 1706(a) SUSTAINABLE ARCHITECTURE (ELECTIVE I)
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

**PART A
(Answer ALL questions)**

(8 × 5 = 40)

- I. Write short notes on the following:
- History and Concepts of Sustainable Development.
 - Carrying capacity.
 - Biomimicry.
 - Low impact construction.
 - Green Building Certification Systems.
 - BREEM.
 - Sustainable Community.
 - Dimensions of sustainability.

PART B

(4 × 15 = 60)

- II. Explain the causes and impacts of global warming and climate change. Discuss the measures to mitigate these problems.
- OR**
- III. Define Sustainable Development. Explain the relevance of sustainable development goals of UN in the present day context.
- IV. Describe the principles of environmentally conscious architectural design.
- OR**
- V. What are renewable and non renewable energy sources? Explain the relevance of conservation of non-renewable sources of energy.
- VI. Differentiate between GRIHA and LEED Rating systems of Green Buildings.
- OR**
- VII. Explain the fundamental principles of Green Building. Give a comparison between conventional building and Green building.
- VIII. Explain the following:
- Urban Heat Island
 - Causes of UHI
 - Impact of UHI
 - Mitigation measures of UHI.
- OR**
- IX. Define what is urban ecology? Describe the different components of urban ecosystem and its importance in urban planning and design.

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**B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022**

**AR 1706 (b) COST EFFECTIVE TECHNOLOGY (ELECTIVE I)
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

- I. Write short notes on the following:
- Low cost versus cost effective construction.
 - Types of initial investment costs in building construction.
 - SERC.
 - Organic building materials.
 - Relevance of the use of alternative technology.
 - Cost effective foundation.
 - Maintenance cost of buildings.
 - One example of cost effective flooring.

PART B

(4 × 15 = 60)

- II. What are the factors influencing longevity of buildings?
OR
- III. Building costs can be reduced through proper planning and design. Substantiate this statement.
- IV. Describe how waste materials can be used in construction.
OR
- V. Describe building materials which were used indigenously in Kerala and discuss its current relevance.
- VI. Give two examples of recent research in innovative/alternative technology.
OR
- VII. Give two examples of traditional construction techniques which have benefitted from improvements.
- VIII. Describe the contributions of Laurie Baker in adapting construction techniques to suit the context of Kerala.
OR
- IX. Compare the initial investment cost of the following constructed using conventional and cost effective technology (Give one example of each).
(i) wall (ii) roof.

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***B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022***

**AR 1707 (a) RESEARCH METHODOLOGY AND STATISTICS (ELECTIVE II)
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

- I. Write short notes on the following:
- Literature Review.
 - Aim and Objectives in a research.
 - Population and sample in research.
 - Statistics in research.
 - Bibliography.
 - Structure of abstract.
 - Questionnaire survey.
 - Case study.

PART B

(4 × 15 = 60)

- II. Explain in detail the characteristics of good research. How does ethics in research help in creating good research?
- OR**
- III. What is literature review? Explain the need for literature review and how it helps in creating the a good research proposal.
- IV. What is hypothesis? What are the different methods to test hypothesis?
- OR**
- V. Explain in detail descriptive and inferential statistics.
- VI. What is research report? What is the structure of a research report?
- OR**
- VII. Research reports are the product of slow, painstaking, accurate inductive work. Elaborate on the process of research writing from creating the outline to bringing out the final draft.
- VIII. What is qualitative research method? What are the different tools used to conduct qualitative research?
- OR**
- IX. What is quantitative research method? What are the different tools used to conduct quantitative research?

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**B.Arch. Degree VII Semester Regular/Supplementary Examination
November 2022**

**AR 1707 (d) VERNACULAR ARCHITECTURE (ELECTIVE II)
(2014 Scheme)**

Time: 3 Hours

Maximum Marks: 100

(Include illustrative sketches and examples wherever necessary)

PART A
(Answer *ALL* questions)

(8 × 5 = 40)

- I. Write short notes on the following:
- Rural and urban vernacular architecture.
 - Architecture without Architects.
 - Decorative features in vernacular housing citing two examples.
 - Mud as a vernacular building material.
 - Documentation inventory.
 - Salient features of a vernacular settlement.
 - Traditionalism.
 - Example of any vernacular architectural knowledge system.

PART B

(4 × 15 = 60)

- II. Explain in detail the regional influences on vernacular architecture. Substantiate citing a suitable case.
- OR**
- III. Describe how sustainability is built into vernacular architecture.
- IV. Enumerate the various vernacular materials found in India. Explain how they have aided in developing stylistic traditions in vernacular language.
- OR**
- V. Elaborate the salient features citing two examples of vernacular architecture found in Southern India.
- VI. Explain the need for documentation and study of vernacular buildings.
- OR**
- VII. What are the techniques that are used in the documentation of vernacular settlements? Explain the process.
- VIII. Explain disaster resistance construction techniques in vernacular construction with an example.
- OR**
- IX. Briefly explain how the knowledge of vernacular architecture can be brought in contemporary regional architecture.