GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEMESTER 7 – OLD PAPER – W24 TO W25 – QUESTION BANK

Subject Name & Code: Green Built Environment - 3170629

Chapter 1: Sustainable Design

Repeated Questions:

1. Sustainability & Environmental Issues:

- **Q.** Differentiate between development and sustainable development. / What is sustainability? Why is it important for development to be sustainable? **(WINTER 2024, 3 Marks; WINTER 2025, 3 Marks)**
- **Q.** What is the urban heat island effect? How can we mitigate urban heat islands? How do cool roofs and solar-reflective walls work? / Explain the Heat Island effect. List strategies to mitigate it. **(WINTER 2024, 7 Marks; WINTER 2025, 7 Marks OR)**

Other Important Questions:

1. Sustainability & Environmental Issues:

- **Q.** Explain the factors affecting soil erosion. **(WINTER 2024, 4 Marks)**
- **Q.** Explain the role of CO_2 in greenhouse effect and global warming. **(WINTER 2024, 4 Marks OR)**
- **Q.** List the causes of Soil Erosion and state why it is harmful with some real life examples. Also list its control measures. **(WINTER 2025, 7 Marks)**

2. Green Buildings, Rating Systems & Site Design:

- **Q.** What is a green parking lot? Explain any one method for its design. **(WINTER 2024, 4 Marks)**
- **Q.** Explain the Structure of the LEED Suite of building assessment systems. **(WINTER 2024, 7 Marks)**
- **Q.** Explain passive architect design using simulation approach and prescriptive approach. **(WINTER 2024, 7 Marks OR)**
- **Q.** What are green buildings? Write any three features of green building. **(WINTER 2024, 3 Marks)**
- **Q.** What are local building regulations? State a few of them. **(WINTER 2025, 4 Marks)**
- **Q.** How does natural topography influence building design? **(WINTER 2025, 3 Marks OR)**

Chapter 2: Water Conservation

Repeated Questions:

1. Water Reuse & Recycling:

- **Q.** Give three examples of reuse of water in a household. / Write methods of saving & recycling water in your house. **(WINTER 2024, 3 Marks; WINTER 2025, 4 Marks)**

Other Important Questions:

1. Water Reuse & Recycling:

- **Q.** Give three examples of reuse of domestic wastewater. **(WINTER 2024, 3 Marks OR)**
- **Q.** List the techniques of Recycling & Reusing of Waste water. **(WINTER 2025, 7 Marks OR)**

2. Rainwater Harvesting:

- **Q.** What is the difference between surface runoff harvesting and rooftop rainwater harvesting? Explain the components of rooftop rainwater harvesting system. **(WINTER 2024, 7 Marks)**
- **Q.** List the types of Roof & Non-Roof. **(WINTER 2025, 4 Marks)**
- **Q.** Explain Enhanced Rain Water Harvesting? List its key components. **(WINTER 2025, 7 Marks)**

3. Water Quality, Crisis & Efficient Fixtures:

- **Q.** What are the parameters of checking water quality. How does bad quality affect human health? **(WINTER 2025, 3 Marks)**
- **Q.** Write about the current water-crisis in our country. List its causes. **(WINTER 2025, 3 Marks)**
- **Q.** List and state the functions of various Water Efficient Plumbing Fixtures. **(WINTER 2025, 3 Marks)**

Chapter 3: Energy Efficiencies

Repeated Questions:

None identified.

Other Important Questions:

1. Energy Consumption & Performance:

- **Q.** Which are the major energy consuming activities in the buildings? **(WINTER 2024, 4 Marks)**
- **Q.** Explain the methods of minimizing energy transmission through the building skin. **(WINTER 2024, 7 Marks OR)**
- **Q.** What will you suggest for maintaining energy efficiency in a new building construction? **(WINTER 2025, 7 Marks OR)**
- **Q.** State the importance of Minimum Energy Performance. **(WINTER 2025, 3 Marks OR)**
- **Q.** Define Enhanced Energy Performance. List its components. **(WINTER 2025, 3 Marks)**

2. Renewable Energy & Water Heating:

- **Q.** State the three different techniques of generating renewable energy on-site. **(WINTER 2024, 3 Marks OR)**
- **Q.** Explain in detail the role of alternate water heating systems in reducing energy consumption. **(WINTER 2025, 7 Marks)**
- **Q.** List the types of Renewable Energy Systems for Common Area Lighting. **(WINTER 2025, 3 Marks OR)**

3. Ozone Depletion – CFC & HCFC:

- **Q.** Explain the role of CFC and HCFC in ozone depletion. **(WINTER 2024, 3 Marks)**
- **Q.** What are HCFCs? Why should equipment be HCFC free? **(WINTER 2025, 4 Marks OR)**

Chapter 4: Sustainable Building Materials

Repeated Questions:

1. Sustainable & Alternative Materials:

- **Q.** Write a short note on alternative construction material. / What are the various alternative construction materials along with how their use is incorporated in construction. **(WINTER 2024, 7 Marks OR; WINTER 2025, 4 Marks)**

Other Important Questions:

1. Sustainable & Alternative Materials:

- **Q.** Enlist different eco-friendly wood-based materials used in building construction. **(WINTER 2024, 3 Marks)**
- **Q.** Write about the various sustainable construction materials and explain how they are advantageous over conventional construction materials. **(WINTER 2025, 7 Marks)**
- **Q.** What are certified green products? List a few certification agencies for the same. **(WINTER 2025, 4 Marks OR)**
- **Q.** Write a note on the Green procurement policy. What are its benefits and challenges? **(WINTER 2025, 7 Marks OR)**

2. Waste Management:

- **Q.** What is construction waste? Give examples of reuse of construction waste? Enlist the methods used for disposal of construction waste. **(WINTER 2024, 7 Marks)**
- **Q.** Why segregation of household waste is an important step before the ultimate disposal? **(WINTER 2024, 4 Marks)**

Chapter 5: Resident Health, Wellbeing & Indoor Environment Quality

Repeated Questions:

1. Indoor Air Quality, Ventilation & Environment Quality:

- **Q.** How the use of low VOC material helps in achieving better indoor air quality? / What are VOCs? Describe Low VOC Materials and their benefits in indoor environments. **(WINTER 2024, 4 Marks OR; WINTER 2025, 4 Marks)**

Other Important Questions:

1. Indoor Air Quality, Ventilation & Environment Quality:

- **Q.** Discuss the types of natural ventilation used in the building. **(WINTER 2024, 4 Marks)**
- **Q.** How can indoor environment quality be maintained? What are the various steps that can be taken to ensure the same? **(WINTER 2025, 7 Marks)**

2. Daylight & Electric Light Metrics:

- **Q.** Define following Daylight & Electric Light Metrics: (1) Illuminance, (2) Useful daylight illuminance, (3) Daylight factor, (4) Vertical sky component, (5) Annual sunlight exposure, (6) Luminance, (7) Room cavity ratio. **(WINTER 2024, 7 Marks)**

Chapter 6: Innovation & Development, Exemplary Case Study

Repeated Questions:

None identified.

Other Important Questions:

1. Case Studies:

- **Q.** Discuss any 2 case studies which have successfully demonstrated sustainable building practices. **(WINTER 2025, 4 Marks OR)**

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