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Reg No.: \_\_\_\_\_

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S8 (R,S) Exam April 2025 (2019 Scheme)

**Course Code: CET458**

**Course Name: SUSTAINABLE CONSTRUCTION**

**Max. Marks: 100**

**Duration: 3 Hours**

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | Explain the concept of Environmental Impact Assessment.                        | (3) |
| 2  | List out the causes and impacts of Global Warming.                             | (3) |
| 3  | Describe insulated concrete forms and analyse its application.                 | (3) |
| 4  | Define Fal-G block and list its benefits.                                      | (3) |
| 5  | Describe Rat-trap bond with neat sketch.                                       | (3) |
| 6  | Describe the application of recycled plastic in construction.                  | (3) |
| 7  | List out any 3 criteria for GRIHA Rating.                                      | (3) |
| 8  | Explain the importance of NBC in promoting sustainable construction practices. | (3) |
| 9  | List the advantages of BIM.  | (3) |
| 10 | Explain any 3 components of building automation.                               | (3) |

**PART B**

*Answer any one full question from each module, each carries 14 marks.*

**Module I**

- |    |  |     |
|----|--|-----|
| 11 | a) Explain Carbon footprint and its importance.                                  | (8) |
|    | b) Discuss the necessity of carrying out the Life Cycle Assessment of a product. | (6) |

**OR**

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|----|---|-----|
| 12 | a) Illustrate the features of green building.     | (6) |
|    | b) Describe embodied energy and its significance. | (8) |

**Module II**

- |    |  |     |
|----|--|-----|
| 13 | a) Explain the uses of any two industrial wastes in sustainable building construction. | (6) |
|----|--|-----|



- b) Illustrate any two alternative building materials developed and promoted by any one Government agency. (8)

**OR**

- 14 a) Explain any two contemporary building materials. (6)  
b) Discuss the alternative building materials developed and promoted by any two Non- Government organisations. (8)

**Module III**

- 15 a) Explain the role of ferrocement in sustainable construction and state its advantages. (8)  
b) Explain filler slab and its benefits. (6)

**OR**

- 16 a) Describe Mivan technique of construction. (8)  
b) Explain the contributions of COSTFORD in sustainable building construction. (6)

**Module IV**

- 17 a) Explain the steps involved in LEED-rating of a building. (8)  
b) Illustrate the features of energy efficient building. (6)

**OR**

- 18 a) Describe a case study of green residential building and green commercial building in India. (8)  
b) Discuss the various features of net zero buildings. (6)

**Module V**

- 19 a) Explain the applications of Building automation in water conservation of building. (8)  
b) Discuss the use of BIM in construction Management. (6)

**OR**

- 20 a) Discuss the concepts and benefits of Building automation. (8)  
b) Explain the application of Building automation in energy efficiency of buildings. (6)

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