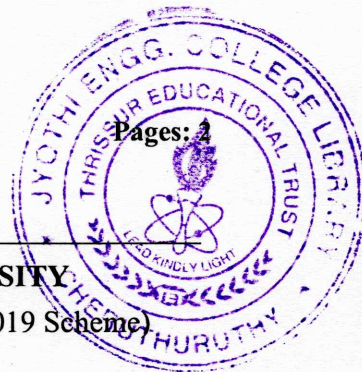


D

0400CET458042503



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

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S8 (S) (FT/PT) Examination September 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  | Identify the properties and uses of sustainable building materials.     | (3) |
| 2  | Explain the use of non-toxic materials in sustainable construction.     | (3) |
| 3  | Demonstrate Environmental Impact Assessment.                            | (3) |
| 4  | Explain global warming potential.                                       | (3) |
| 5  | Explain the concept of Mivan techniques in sustainable construction.    | (3) |
| 6  | Discuss the concept of net Zero building with a case study.             | (3) |
| 7  | Illustrate Rat trap bond used in construction with a neat sketch.       | (3) |
| 8  | Explain building integrated photovoltaic used in sustainable buildings. | (3) |
| 9  | Explain the benefits of building information modelling.                 | (3) |
| 10 | Discuss the application of Building Automation in water conservation.   | (3) |

**PART B**

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

**Module I**

- |    |                                                                                                                                                         |     |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 11 | a) Assuming that you are assigned to conduct the Life Cycle Assessment of a building. what steps would you follow to carry out the LCA of the building? | (7) |
|    | b) Explain any one sustainability indicator in detail.                                                                                                  | (7) |

**OR**

- |    |                                                               |     |
|----|---------------------------------------------------------------|-----|
| 12 | a) Write a short note on embodied carbon.                     | (7) |
|    | b) Give a brief idea on green buildings and its significance. | (7) |

**Module II**

- |    |                                                                      |     |
|----|----------------------------------------------------------------------|-----|
| 13 | a) Explain Fal-G Blocks. Explain the benefits of using Fal-G Blocks. | (9) |
|    | b) Explain any three natural building materials.                     | (5) |

**OR**

- |    |                                                                                        |     |
|----|----------------------------------------------------------------------------------------|-----|
| 14 | a) Discuss about hydra form. Explain the benefits of using hydra form in construction. | (9) |
|----|----------------------------------------------------------------------------------------|-----|



- b) Give a detailed study on alternate materials developed and promoted by any non-government organisations. (5)

**Module III**

- 15 a) Explain Filler slab and its significance. Discuss the disadvantages of using filler slab (7)  
b) Explain the contribution of Nirmithi Kendra in promoting sustainable construction. (7)

**OR**

- 16 a) Explain the role of ferrocement in sustainable construction with its advantages and disadvantages. (7)  
b) Explain the concept of cavity walls. (7)

**Module IV**

- 17 a) Compare the GRIHA rating with the LEED rating system. (7)  
b) Discuss the main IGBC guidelines for construction (7)

**OR**

- 18 a) If you wish to construct a GRIHA -rated building. What are the steps involved in getting the certification? (7)  
b) Discuss the features of energy efficient buildings based on a residential case study. (7)

**Module V**

- 19 a) Discuss the role of BIM in construction scheduling. (7)  
b) Discuss the components of Building Automation (7)

**OR**

- 20 a) Explain energy efficiency by Building Automation. (7)  
b) Discuss BIM in cost estimation. (7)

\*\*\*\*