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)

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