Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (R,S)(FT/WP) Examinations April 2026 (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		"Sustainability is using resources in a way that they will last". Do you agree with this statement? Justify your answer with emphasis on sustainable construction.	(3)
2		Explain any one sustainability indicator.	(3)
3		What are ECO blocks and Insulated Concrete forms? Mention their role in sustainable construction.	(3)
4		Explain the use of recycled materials in sustainable construction.	(3)
5		Explain the components of composite beam and panel roof.	(3)
6		Describe pre-engineered and ready to use building elements.	(3)
7		As a project engineer, what levels of certification can you target under the LEED rating system?	(3)
8		Describe the key concepts of net zero energy buildings.	(3)
9		Mention the advantages of BIM in the construction industry.	(3)
10		Elucidate the basic concept of Building Automation.	(3)

PART B

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

Module I

11	a)	Explain the causes and impacts of global warming.	(8)
	b)	Explain how LCA is used to assess a residential building and discuss its benefits.	(6)

OR

12	a)	If you are assigned to conduct Environmental Impact Assessment (EIA) for a proposed project, explain the steps you would follow with the help of a flow chart.	(8)
	b)	Illustrate the features of a green building with a case study.	(6)

Module II

13	a)	Explain any four natural building materials.	(8)

b) Discuss any three alternative building materials or technologies developed and promoted by TERI. (6)

OR

14 a) Explain any four sustainable materials that can be made from utilization of wastes. (8)

b) Explain three alternative building materials developed by government organization. (6)

Module III

15 a) Explain filler slab construction technique and its advantages. (8)

b) Explain the contributions of Nirmithi Kendra in promoting sustainable construction. (6)

OR

16 a) Describe Mivan technique of construction and its advantages. (8)

b) Explain the contributions of Habitat in promoting sustainable construction. (6)

Module IV

17 a) Compare the GRIHA and LEED rating systems, highlighting their key differences and similarities. (8)

b) Explain the key features of an energy-efficient building using a suitable case study. (6)

OR

18 a) Explain the important standards and guidelines laid down by IGBC for building construction. (8)

b) Propose appropriate energy-efficient design strategies for a residential building. (6)

Module V

19 a) Discuss the components of Building Automation system (8)

b) How does the use of BIM contribute to faster execution and cost savings in construction projects? Support your answer with relevant examples. (6)

OR

20 a) Discuss the role of building automation in sustainable construction practices. (8)

b) Discuss the use of BIM in construction management. (6)

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