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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (S,FE) Examinations September 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		Briefly explain Embodied Energy and Embodied Carbon.	(3)
2		List out the sustainability indicators.	(3)
3		Discuss the benefits of using biomaterials in construction.	(3)
4		Express in detail about FaL-G.	(3)
5		Illustrate the Rat-trap bond.	(3)
6		List out the benefits of using pre-engineered construction.	(3)
7		Discuss the concept of net zero building.	(3)
8		What is building-integrated photovoltaics?	(3)
9		Explain the benefits of BIM.	(3)
10		List any three ways that building automation can improve the functional efficiency of a building.	(3)

PART B

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

Module I

11	a)	Explain Life Cycle Assessment with an example.	(6)
	b)	List out the strategies to mitigate global warming.	(8)

OR

12	a)	Elaborate in detail about EIA and stages in EIA process.	(7)
	b)	Discuss about Green buildings using any two techniques.	(7)

Module II

13	a)	Explain any two locally available building materials in our state.	(6)
	b)	Discuss in detail any four waste material that can be utilized as building material.	(8)

OR

14	a)	Explicate in detail about stabilized mud block.	(4)

b) Outline the various efforts made by governmental and non-governmental organizations to conduct research and development of sustainable construction materials. (10)

Module III

15 a) Detail out any two alternative roofing systems to promote sustainable construction. (7)

b) Explain the role of ferrocement in sustainable construction with its advantages. (7)

OR

16 a) Articulate the Mivan construction technique and list out its advantages. (7)

b) Explain the contributions of COSTFORD in promoting sustainable construction. (7)

Module IV

17 a) Differentiate GRIHA and LEED rating system. (7)

b) Illustrate the features of an Energy Efficient Building. (7)

OR

18 a) Explain the role of IGBC in Indian green building rating system. (6)

b) Detail out any four features of green buildings. (8)

Module V

19 a) Discuss the role of BIM in construction scheduling. (4)

b) Explain the applications of Building Automation for water conservation of buildings. (10)

OR

20 a) Enumerate and explain the components of Building Automation System. (4)

b) Elucidate how building automation contributes to sustainable building. (10)

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