

Third Semester B.E./B.Tech. Degree Examination, June/July 2025
Sustainable Design Concept for Building Services

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.**2. M : Marks, L: Bloom's level, C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Explain carbon foot print and net zero is carbon offsetting.	10	L2	CO1
	b.	Explain the key strategies and principles associated with sustainable construction and resource management.	10	L2	CO1
OR					
Q.2	a.	Explain in brief the influence of climate on design, construction and performance of buildings.	10	L2	CO1
	b.	Write short notes on : (i) Solar angles and sunpath diagram. (ii) Design of shading system	10	L2	CO1
Module – 2					
Q.3	a.	Identify various building elements through which heat gain occurs and brief.	10	L2	CO2
	b.	List the (i) Measures on building acoustics (ii) Defects, prevention of sound transmission	10	L2	CO2
OR					
Q.4	a.	What is Indoor Air Quality? List the ill effects of Indoor Air Quality.	10	L2	CO2
	b.	Enumerate the strategies for enhancing visual comfort in buildings through day lighting and artificial lighting.	10	L2	CO2
Module – 3					
Q.5	a.	Discuss in detail energy efficiency in building envelope, energy efficient HVAC and lighting as per ECBC2017.	12	L2	CO3
	b.	What are the benefits of rainwater harvesting	8	L2	CO3
OR					
Q.6	a.	Briefly explain different types of waste and its treatment methods.	12	L2	CO3
	b.	Discuss waste management system in healthcare facilities.	8	L2	CO3
Module – 4					
Q.7	a.	Explain life cycle assessment and its types.	10	L2	CO4
	b.	Explain different phases of green building project management.	10	L2	CO4
OR					
Q.8	a.	Explain low carbon cement and zero emission bricks with examples.	10	L2	CO4
	b.	Explain green house gas emission, sources and its effects.	10	L2	CO4
Module – 5					
Q.9	a.	Write short notes on : (i) LEED (ii) BREEAM (iii) IGBC (iv) GRIHA	20	L2	CO5
OR					
Q.10	a.	Explain : (i) Pre-design credits (ii) Detailed design credits (iii) Preconstruction credits (iv) Post construction credits	20	L2	CO5
