Roll No: | | | | | | | | | | | |

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

Presidency University Act, 2013 of the Karnataka Act No. 41 of 2013 | Established under Section 2(f) of UGC Act, 1956
Approved by AICTE, New Delhi | Approved By BCI
Bengaluru

Mid Term Examinations - October 2026

Date: 06/10/2026 **Time:** 09:30 AM - 11:00 AM

Course Code: CIV2003 **Course Name:** Sustainable Materials and Green Buildings

Semester: Seventh Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2	CO3
Marks	8	50	32

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	What is meant by inter-generational equity?	2	CO1	BT1
2	Define carbon footprint and state its unit.	2	CO1	BT1
3	Define embodied energy. What are its units?	2	CO1	BT1
4	State any two factors affecting embodied energy.	2	CO1	BT1
5	Differentiate between conventional and non-conventional energy sources with one example each.	2	CO3	BT1

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain ISO 14001 EMS and PDCA cycle.	10	CO2	BT3
7	Explain Carbon Capture and Storage (CCS). List the advantages and disadvantages.	10	CO2	BT3

PART C: Answer Any 1 Following Questions. 15 M

Q.N.	Questions	M	CO	BT
8	Explain LCA methodology and calculate Global Warming Potential (GWP). Given: *CO2=980 kg* , *CH4=15 kg* , *N2O=1.9 kg* . GWP factor for CO_2=1 , CH_4=25 , and N_2O=298.	15	CO2	BT3
9	Calculate the total embodied energy for the Reinforced Cement Concrete beam structure of volume 8m^3. Given: • Total volume = 8m^3 • Steel = 1.9% • Density of steel = 7960 kg/m^3 • Density of concrete = 2400 kg/m^3 • Embodied Energy of steel = 25 MJ/kg. Embodied Energy of concrete = 0.7 MJ/kg	15	CO2	BT3

PARTD: Answer Any 1 Following Questions. 15 M

Q.N.	Questions	M	CO	BT

PTO (Please Turn Over)

10	Discuss wind energy and bio-fuel energy as non-conventional energy sources with their applications, advantages and limitations.	15	CO3	BT3
11	Apply suitable green building techniques to a residential building to reduce energy consumption and improve environmental performance. Explain the techniques adopted.	15	CO3	BT3