

Civil

Paper / Subject Code: 42082 / Green building constructions (DLOC - IV)

02

B.E. (Civil) Sem - III / 'C' Scheme / Subj - DLOC - IV - GEBC / Date: 10/11/2025  
S.H. 2025

Time: 3 hrs

Marks: 80

QB. Code: -10097552

- NB:**
- 1) Question No. 1 is compulsory
  - 2) Attempt any 3 of the remaining 5 questions
  - 3) Assume suitable data wherever necessary
  - 4) Numbers to the right indicate full marks.

1. Answer any 4.
  - a) Explain the concept of sustainable development. 5
  - b) Write a short note on site preservation. 5
  - c) Explain how wastewater can be treated and reused in green buildings. 5
  - d) Write a short note on sustainable building materials. 5
  - e) Explain green retrofitting. 5
  - f) Write a brief overview of IGBC. 5
2. a) Explain the benefits of green buildings. 5  
b) Write a short note on passive architecture. 5  
c) What is heat island effect? Briefly discuss its causes and effects. Explain in detail how it can be minimized in built environments. 10
3. a) Enlist any five water efficient plumbing fixtures and tabulate their consumption, duration and estimated daily use as per Uniform Plumbing Code of India. 5  
b) Explain rainwater harvesting in detail, mentioning its components and their uses. Draw a neat sketch to support your answer. 10  
c) Define full time equivalent (FTE). Calculate the FTE of a commercial building where 240 employees work for 8 hours a day, 200 employees work for 6 hours a day, 160 employees work for 4 hours a day and 40 employees work for 10 hours a day. 5
4. a) Briefly explain the measures taken to control soil erosion after the construction phase. 5  
b) Explain how wastewater can be treated and reused in green buildings. 5  
c) Write a short note on certified green building materials. 10
5. Write short notes on the following, in the context of green buildings:
  - a) Carbon dioxide monitoring 5
  - b) Day lighting 5
  - c) Occupants' well-being facilities 5
  - d) Indoor air quality 5
6. a) Explain the certification process of IGBC, preferably in the form of a flowchart. 5  
b) Enlist the sub-modules of any one module from the IGBC project checklist and explain the same briefly. 5  
c) What is green audit? What are its stages? Explain in detail. 10

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