

Register No:

Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FOURTH SEMESTER B.TECH. DEGREE EXAMINATION(R), MAY 2024**Civil Engineering
(2020 SCHEME)****Course Code : 20CET298****Course Name : Sustainable Materials and Green Building****Max. Marks : 100****Duration:3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. List out any five global sustainability development goals.
2. Discuss some effective strategies for reducing carbon footprints at the individual level.
3. Comment on the "environmental issues related to quarrying of building materials".
4. Define lightweight beams and explain its significance.
5. Comment on the statement: "Incorporating arches in wall construction can be both structurally and aesthetically beneficial".
6. Explain the benefits and challenges of modular construction in modern building projects.
7. Explain the concept of GRIHA rating system.
8. List any six sustainable development goals related to green building.
9. Explain the certification criteria of IGBC rating systems.
10. Discuss about the alternative building materials promoted by GRIHA.

PART B*(Answer one full question from each module, each question carries 14 marks)***MODULE I**

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| 11. (a) Define sustainability. | 4 |
| (b) Describe sustainability in terms of maintaining ecological balance, social equity and economic viability for current and future generations. | 5 |
| (c) Discuss the benefits of sustainable construction. | 5 |

OR

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| 12. Explain the process of global warming and discuss its impacts on natural ecosystems. | 14 |
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MODULE II

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| 13. List out any eight cost-effective construction materials that can be utilised for construction purpose. Describe any five materials in detail. | 14 |
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OR

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| 14. (a) Comment on the use of recycled building materials as cost effective construction materials. | 7 |
| (b) How do regional differences in material availability affect the use of concrete blocks? | 7 |

MODULE III

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| 15. List the advantages, disadvantages, properties and uses of fiber board, particle board and multi wood. | 14 |
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OR

16. (a) Explain in detail the construction and features of voided slab technology. 7
(b) List out the properties and uses of veneer. 7

MODULE IV

17. Explain in detail the concept of net zero building. 14

OR

18. Briefly explain and compare the IGBC - LEED rating system. 14

MODULE V

19. Illustrate the use of bamboo, cork and recycled plastic as green materials. 14

OR

20. (a) Explain the need of using alternate building materials for construction. 7
(b) List out any six alternate building materials available in market. Explain any three of them. 7
