

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER M.TECH DEGREE EXAMINATION (Regular), MAY 2023**STRUCTURAL ENGINEERING AND CONSTRUCTION MANAGEMENT****(2021 Scheme)****Course Code: 21SC206-D****Course Name: Sustainable Construction and Building Materials****Max. Marks: 60****Duration: 3 Hours****PART A****(Answer all questions. Each question carries 3 marks)**

1. Differentiate 'Green' and 'Sustainable' construction.
2. Explain the properties and applications of fibre reinforced concrete.
3. Describe the properties of nano concrete and explain how it contributes to sustainability.
4. Explain the key features of ECBC 2017.
5. Define 'U' value of building material. Explain its significance with the help of examples.
6. Describe any six low energy materials used for the construction of green building.
7. Illustrate the advantages of green building to the environment.
8. Compare and contrast the LEED and BREEM rating.

PART B**(Answer one full question from each module, each question carries 6 marks)****MODULE I**

9. Illustrate the environmental impacts of construction and its effects on sustainable development. (6)

OR

10. Explain the six pillars for a Resource Efficiency Framework in India. (6)

MODULE II

11. Describe the global ISO standards for green products and explain the benefits of selecting certified green products. (6)

OR

12. Describe the role of 'Embodied Energy' in sustainable building construction and list the low embodied materials that you would recommend for construction. (6)

MODULE III

13. Explain the contribution of 'Costford' to sustainable building construction with the help of a case study. (6)

OR

14. Explain a)ferrocement technology and b)nanoconcrete (6)

MODULE IV

15. Demonstrate the compliance options of ECBC 2017. (6)

OR

16. Describe ECBC building classification. (6)

MODULE V

17. Enumerate the passive design strategies for a net zero energy building. Suggest five strategies to be considered for 'Form and Orientation' of the building. (6)

OR

18. Illustrate dessicant cooling system with the help of diagram. (6)

MODULE VI

19. Illustrate the characteristics of 'GRIHA' rating and explain the non-financial benefits of 'GRIHA' rating (6)

OR

20. With the help of a case study, explain the features of platinum LEED certified building. (6)
