

Reg No :

Name :

MAR ATHANASIOUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

(Govt. Aided Autonomous Institution)

First Semester B.Tech. Degree (SAY) Examination, February, 2026

Course Code: B24CE1T01

Course Name: Introduction to Civil Engineering

Max. Marks: 100

Duration:3 Hours

PART - A: 30 Marks (10 Qns x 3 Marks)

Answer all questions

1. What factors do civil engineers consider during the planning phase of infrastructure projects?
2. List three strategies used in civil engineering to minimize environmental impact during construction.
3. How does structural steel differ from other types of steel used in construction (e.g., stainless steel or carbon steel)?
4. Classify steel based on its carbon content and explain its engineering applications
5. List various types of shallow foundations with its purpose.
6. Why does framed constructions and load-bearing wall structures have different construction costs?
7. What do you mean by energy efficiency in buildings?
8. Illustrate with an example, the Floor Area Ratio (FAR) in buildings as per KMBR.
9. How do you establish control points in a surveying project?
10. Enumerate the main advantages and disadvantages of plane table surveying compared to other types of surveying.

PART - B: 70 Marks (5 Qns x 14 Marks)

Answer any One full question from each module

Module 1

11. Explain the significance of hydraulics and water resources engineering in sustainable development. Discuss the challenges in water resource management and provide examples of modern solutions used in this field.

OR

12. Explain the role of civil engineering in contributing to achieve the Sustainable Development Goals (SDGs).

Module 2

13. Briefly explain different methods of seasoning of timber.

OR

14. a) Discuss the role of aggregates in concrete. (7 marks)
b) Briefly explain various applications of concrete. (7 marks)

Module 3

15. Compare brick and stone masonry in terms of materials, construction advantages, limitations, and their effective applications.

OR

16. Discuss the structural role of different types of walls in a building. Explain how the walls provide insulation barrier, sound barrier and safety barrier in buildings.

Module 4

17. Explain the role of MEP systems (Mechanical, Electrical, Plumbing) in the functioning of modern buildings.

OR

18. List the classification of buildings as per NBC and explain any two in detail.

Module 5

19. Explain the role of modern surveying techniques such as Total station and GPS improve the efficiency and accuracy of civil engineering projects.

OR

20. Describe how indirect distance measurement techniques can be used as an alternative to direct methods when obstacles are present in the field.
