

Reg. No. :

**Question Paper Code : 30499**

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

First Semester

Construction Engineering and Management

CN 4101 – MODERN CONSTRUCTION MATERIALS

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the alloy of steel.
2. Mention on the drawbacks of cement slurry coatings to reinforcement.
3. What is the main function of set retarders.
4. Write short notes on waterproofing compounds.
5. List four advantages of composite material over conventional material.
6. Recall the various types of FRP.
7. What are the advantages of high-performance concrete?
8. Summarize self – compacting concrete.
9. Give some examples of smart materials.
10. What are the basic mechanisms essential for intelligent materials?

PART B — (5 × 13 = 65 marks)

11. (a) Explain in detail about the various types of coating given to the reinforcement.

Or

- (b) Describe the manufacturing process of steel in the detail with neat sketches.

12. (a) List out the various types of waterproofing compounds with their uses.

Or

- (b) List out the various types of flooring. And also explain any two types with neat sketches.

13. (a) What are the Civil Engineering applications and uses of Fiber Reinforced Polymer in modern construction?

Or

- (b) Describe the manufacturing process of plastics with neat sketches.

14. (a) What are the various techniques used to achieve high-strength concrete? Explain.

Or

- (b) What are the tests carried out in the fresh stage of self-compacting concrete to determine its flow properties? Explain any two of them with neat sketches.

15. (a) What is Nano Technology in construction? Write the properties of nano Concrete.

Or

- (b) Discuss about the applications of smart materials in the modern construction industry.

PART C — (1 × 15 = 15 marks)

16. (a) With a case study, explain the least developments in the application of intelligent materials in the construction industry.

Or

- (b) What are the different admixtures used in construction. Explain any three in detail.