Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 10451

M.E./M.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

First Semester

Construction Engineering and Management

CN 5101 — MODERN CONSTRUCTION MATERIALS

(Regulation 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of self-compacting concrete?
2. List out the waste materials used as partial replacement of cement.
3. Write the drawbacks of epoxy coating to reinforcement.
4. What are the improved properties of new alloy steel?
5. Enumerate the various types of plastics.
6. Compare carbon and glass fibre reinforced plastics.
7. Write short notes on set retarders.
8. Enumerate the various types of water proofing compounds.
9. Give any four examples for smart materials.
10. What are the basic mechanisms essential for intelligent materials?

PART B — (5 × 13 = 65 marks)

11. (a) What are the tests carried out in the fresh stage of SCC to determine its properties? Explain any two of them with neat sketches.

Or

(b) Discuss in detail the properties and advantages of high strength concrete.

12. (a) Explain the properties and advantages of using aluminium in construction.

Or

(b) (i) Describe the manufacturing process of steel in detail.

(ii) Discuss the properties and manufacturing process of Low Density Polyethylene (LDPE).

13. (a) Discuss in detail the strengthening of structural elements by FRP composites.

Or

(b) Discuss in detail about the types of plastics, manufacturing process and its uses.

14. (a) (i) Discuss in detail about the types and properties of water proofing compounds. (7)

(ii) Explain about the various types of facade materials with its uses. (6)

Or

(b) Discuss in detail about the various chemical admixtures used in concrete.

15. (a) Describe the various smart materials used in construction industry.

Or

(b) Elaborate on the barriers faced in adoption of smart materials in construction industry.

PART C — (1 × 15 = 15 marks)

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

Or

(b) What are the various construction chemicals used in concrete? Explain in detail.

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