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Question Paper Code : 50321

B.E./B.Tech DEGREE EXAMINATIONS, APRIL/MAY 2023.

Seventh/Eighth Semester

Civil Engineering

CE 8020 — MAINTENANCE, REPAIR AND REHABILITATION OF
STRUCTURES

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the classifications of chemical attack on concrete?
2. Define creep on concrete.
3. Define popouts on concrete.
4. How to minimize frost damage?
5. How to reuse industrial waste?
6. How geopolymer concrete is produced?
7. What is meant by pitting corrosion?
8. Differentiate between shoring and underpinning.
9. What is meant by grouting?
10. What are the stages of concrete repair?

PART B — (5 × 13 = 65 marks)

11. (a) Describe the thermal movement in concrete structures.

Or

- (b) Describe the procedure to evaluate the cause for deterioration of concrete structures?

12. (a) Explain about the poor construction practice and errors in design of concrete structures.

Or

- (b) Explain
- (i) External stressing (4)
 - (ii) Stitching (4)
 - (iii) Polymer impregnation. (5)

13. (a) What aspects are to be investigated for high performance in complex exposure conditions?

Or

- (b) Explain
- (i) Vacuum concrete (6)
 - (ii) Self compacting concrete. (7)

14. (a) Explain the basic principle of corrosion. Explain the various corrosion protection techniques.

Or

- (b) Explain different tests used in NDT methods. Explain briefly any two of them.

15. (a) Explain briefly about the process of jacketing technique.

Or

- (b) Explain the classification of cracks and how the cracks can be measured.

PART C — (1 × 15 = 15 marks)

16. (a) How do you strengthen the various structural elements? Explain in details with sketches.

Or

- (b) Discuss about explosive demolition and chemical demolition agent techniques.