

11 9 APR 2023

Reg. No.

Question Paper Code

11774

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

Eighth Semester

**Civil Engineering**

**CE8020 – MAINTENANCE, REPAIR AND REHABILITATION OF  
STRUCTURES**

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

- |   | <i>Marks,<br/>K-Level, CO</i> |
|---|-------------------------------|
| 1. Discuss about the scope of maintenance of concrete structures.           | 2,K1,CO1                      |
| 2. What are the physical inspections performed on damaged structure?        | 2,K2,CO1                      |
| 3. Name the various types of spalling.                                      | 2,K1,CO2                      |
| 4. Discuss briefly the effect due to climate.                               | 2,K2,CO2                      |
| 5. List the various types of polymer concrete.                              | 2,K1,CO3                      |
| 6. List out the applications of Sulphur infiltrated concrete.               | 2,K1,CO3                      |
| 7. Describe the properties of coating materials.                            | 2,K2,CO4                      |
| 8. Discuss about stitching.   | 2,K2,CO4                      |
| 9. List the methods to overcome low member strength in concrete structures. | 2,K1,CO5                      |
| 10. State the need of accelerated strength.                                 | 2,K1,CO5                      |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) With the flow chart analyze the steps involved in the assessment procedure for evaluate damages in a structure and to carry out rehabilitation work. 13,K2,CO1
- OR**
- b) What is meant by distressed concrete? What are the causes of distress in concrete? How it is treated? 13,K2,CO1
12. a) List the various types of corrosion in concrete discussing its phenomena, causes and effects. Also suggest any one method of protection against each types of corrosion. 13,K2,CO2

**OR**

*K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create*

**11774**



b) Explain in detail about the requirements, mechanism and components of quality management system. *13,K2,CO2*

13. a) How polymerization is achieved in polymer concrete? Explain in detail. *13,K2,CO3*

**OR**

b) Explain in detail on Self compacting concrete and its applications. *13,K2,CO3*

14. a) Write notes on the following Epoxy injection technique and Polymer coating for rebars. *13,K2,CO4*

**OR**

b) Define the term underpinning. Discuss any two of its methods mentioning its applicability. *13,K2,CO4*

15. a) With simple sketches explain the methods of improving the strength of existing columns and beams. *13,K2,CO5*

**OR**

b) How do you repair a structure distressed due to corrosion. Explain in detail. *13,K2,CO5*

**PART - C (1 × 15 = 15 Marks)**

16. a) Explain various techniques of transportation of structures. *15,K2,CO6*

**OR**

b) Explain about structural health monitoring techniques. *15,K2,CO6*