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Question Paper Code	12552
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B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Eighth Semester

Civil Engineering

20CEEL801 – MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Differentiate between the terms maintenance and rehabilitation.	2	K2	CO1
2. Explain why inspection is needed for damaged structure.	2	K2	CO1
3. What are the factors affect the durability of concrete?	2	K2	CO2
4. Discuss about segregation in concrete.	2	K2	CO2
5. Describe the various types fibers used in FRC.	2	K2	CO3
6. What is mean by Geopolymer concrete? List the materials used for making geopolymer concrete.	2	K1	CO3
7. Explain the mechanism of cathodic protection.	2	K2	CO4
8. List out the types of corrosion inhibitors.	2	K1	CO4
9. Why is structural health monitoring important?	2	K2	CO5
10. When do you demolish a building?	2	K2	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Explain in detail about the steps involved in diagnosing the problem in a structure.	13	K2	CO1
OR			
b) i) Discuss about the facets of maintenance.	6	K2	CO1
ii) Write down the types of inspection carried out for concrete structure.	7	K2	CO1
12. a) Explain about the design and constructional errors for concrete building.	13	K2	CO2
OR			
b) i) Explain about the effect of temperature on concrete.	6	K2	CO2
ii) Discuss the various factors influencing the corrosion and explain in detail.	7	K2	CO2
13. a) Write detail note on vacuum concrete and self-compacting concrete.	13	K2	CO3

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

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OR

- b) i) Write notes on concrete made with industrial wastes. 7 K2 CO3
ii) Write short notes about the reactive powder concrete. 6 K2 CO3
14. a) Describe the purpose of underpinning and explain its method with neat sketch. 13 K2 CO4

OR

- b) Explain in detail about the NDT methods with figure. 13 K2 CO4
15. a) Discuss the different methods of strengthening the concrete structures against earthquake. 13 K2 CO5

OR

- b) i) Need of Structural strengthening. 7 K2 CO5
ii) Factors affecting the selection of strengthening method. 6 K2 CO5

PART - C (1 × 15 = 15 Marks)

16. a) Explain the procedure for demolishing main structural members like columns, beams and slabs with the help of neat sketch. 15 K2 CO6

OR

- b) Explain in detail about structural health monitoring system with its pattern and operation evaluation. 15 K2 CO6