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GIET UNIVERSITY, GUNUPUR - 765022
M. Tech. (Third Semester) Examinations, December - 2023
MPECT3012 - Maintenance and Rehabilitation of Structures
(Construction Technology and Management)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART - A**(2 x 10 = 20 Marks)**

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| Q1. Answer ALL questions | CO# |
| a. Define the term distress. | CO1 |
| b. Name different types of distress. | CO1 |
| c. What is meant by renovation? | CO1 |
| d. Write a short note on corrosion. | CO2 |
| e. Discuss how the variation of pH affects the corrosion process. | CO2 |
| f. What is importance of passivating film in RCC members? | CO2 |
| g. Explain the need for evaluation of structures. | CO3 |
| h. Briefly describe of preliminary investigation and detailed investigation. | CO3 |
| i. Enumerate the various cracks repairs techniques and other repair techniques for structures. | CO4 |
| j. How bridge Decks are repaired? Discuss briefly. | CO4 |

PART - B**(10 x 5 = 50 Marks)**Answer ANY FIVE questions

- | | Marks | CO# |
|---|-------|-----|
| 2. a. Explain the mechanism of various causes of deterioration in post- construction stage. | 5 | CO1 |
| b. Explain the cracking phenomena in plastic concrete. Give the remedial measures. | 5 | CO1 |
| 3.a. What are settlement cracks? What are the factors affecting the settlement cracks? | 5 | CO1 |
| b. Explain mechanism of crazing, causes of crazing. Give the remedial measures. | 5 | CO1 |
| 4. a. Discuss the factors affecting corrosion. What are its effects? | 5 | CO2 |
| b. Explain the mechanism of corrosion; name the corrosion inhibitors and promoters. | 5 | CO2 |
| 5.a. What are the factors effecting chloride induced corrosion? Explain in detail mechanism of chloride induced corrosion and suggest suitable remedial measures. | 5 | CO2 |
| b. Explain in detail mechanism of carbonation induced corrosion, suggest suitable remedial measures. | 5 | CO2 |
| 6. a. Write the procedure and limitations of rebound hammer method. | 5 | CO3 |
| b. Explain carbonation test and cathodic protection test. | 5 | CO3 |
| 7.a. Describe the occurrence of distress Due to Pre-construction stage, Construction stage and Post construction stage. | 5 | CO4 |
| b. Write a note on cracking, Spalling, Staining, Disintegration and Scaling. | 5 | CO4 |
| 8. a. Explain the process of guniting in detail with neat diagram. | 5 | CO4 |
| b. Discuss the method of underpinning in detail. | 5 | CO4 |

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