

Register No.: ..... Name: .....

**SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)**

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

**SECOND SEMESTER M.TECH DEGREE EXAMINATION (Regular), JULY 2022*****STRUCTURAL ENGINEERING AND CONSTRUCTION MANAGEMENT*****(2021 Scheme)****Course Code: 21SC206-A****Course Name: Repair and Rehabilitation of Structures****Max. Marks: 60****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. Enumerate the causes of deterioration in concrete structures
2. Explain 'air entrained mortar' and 'fire resistant mortar'.
3. Differentiate between shotcreting and guniting.
4. Describe the various factors affecting abrasion resistance of concrete.
5. Explain the limitations and disadvantages of strengthening steel frames using post tensioned cables.
6. Enumerate the causes of water infiltration in tunnels.
7. Describe the preliminary steps for strengthening of foundation.
8. Explain 'Bonded overlay'.

**PART B*****(Answer one full question from each module, each question carries 6 marks)*****MODULE I**

9. Describe the assessment procedure for evaluating a damaged structure. (6)

**OR**

10. Enumerate the tests for determining the performance and integrity of concrete and explain any two. (6)

**MODULE II**

11. Explain the manufacturing process, properties and applications of ferrocement (6)

**OR**

12. Enumerate the different cements used for accelerated strength gain. Explain 'Expansive cement'. (6)

**MODULE III**

13. Illustrate the mechanism of corrosion in reinforced cement concrete with figures. (6)

**OR**

14. Elucidate vacuum concrete. (6)

**MODULE IV**

15. Illustrate the various methods for strengthening a beam with neat figures. (6)

**OR**

16. Illustrate the effects of fire attack in concrete structures. (6)

**MODULE V**

17. Elucidate rehabilitation of building with the help of a case study. (6)

**OR**

18. Explain the importance of rehabilitation and retrofitting as a part of construction engineering. (6)

**MODULE VI**

19. Enumerate the different methods for strengthening an existing wall. Illustrate any two methods with the help of figures. (6)

**OR**

20. Describe the different methods of underpinning with the help of figures. (6)

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