

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER M. TECH DEGREE EXAMINATION**

Civil Engineering

(Structural Engineering & Construction Management)

04CE7413 – Maintenance & Rehabilitation of Structures

Max. Marks : 60

Duration: 3 Hours

PARTA

Answer All Questions

Each question carries 3marks

1. How permeability affects durability of concrete ?
2. Briefly discuss corrosion mechanism.
3. Define maintenance, repair and rehabilitation .
4. Discuss the special elements for accelerated strength gain
5. Write brief note on polymer coating for rebars.
6. What is underpinning?
7. Briefly discuss overlays.
8. Discuss injection sealing techniques.

PARTB

Each question carries 6marks

9. Why quality assurance for concrete structures is needed? Discuss about the quality of supervision to be followed at site.

OR

10. Explain in detail about the thermal properties of concrete

11. Explain the design and construction errors.

OR

12. Explain in detail the various methods of corrosion protection.

13. Explain the assessment procedure for evaluating a damaged structure.

OR

14. Explain the various causes of deterioration.

15. Explain fibre reinforced concrete with applications to repair of structures.

OR

16. Explain special concretes and their applications.

17. Explain in detail guniting and shotcreting.

OR

18. Explain the process of epoxy injection for the repair of cracks.

19. With sketches explain how do you strengthen a heavily corroded RCC beam. Explain strengthening of beam column joint using FRP composites.

OR

20. Explain the various techniques for the repair of structures subjected to marine exposure.