

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1724904**Date: 03-06-2013****Subject Name: Maintenance and Rehabilitation of Structures****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
- 4.

- Q.1 (a)** Explain the Maintenance, Repair, Retrofitting, Rehabilitation and Restoration in construction industry. **07**
- (b)** What is deterioration of structure? Enlist and explain various causes of deterioration of structure **07**
- Q.2 (a)** Enlist principles of rehabilitation and focus on areas of rehabilitation work **07**
- (b)** Define special concrete .Enlist various uses and application of special concrete **07**
- OR**
- (b)** Explain Quality assurance for concrete construction? **07**
- Q.3 (a)** Describe the term significance of Cathodic protection for construction. **07**
- (b)** Explain about the assessment of damaging to concrete structure **07**
- OR**
- Q.3 (a)** Write shortnote on **07**
- (1) Dry mix shotcrete (2) Wet mix shotcrete
- (b)** Enlist various reasons of failures of corrosion-protection systems for bonded post-tensioned concrete structures **07**
- Q.4 (a)** Describe special mortar, Epoxy resin with reference to repair and rehabilitation **07**
- (b)** Explain the strengthening of walls by prestressing using external binding concept **07**
- OR**
- Q.4 (a)** Explain in brief about the following repair rehabilitation strategies **07**
- (a) Stress reduction (b) Base isolation (c) Enhancing shear strength
- (b)** Suggest the techniques to restore original strength for **07**
- (1) Small cracks in existing masonry
- (2) Large cracks and crushed concrete
- Q.5 (a)** Discuss about Chloride attack and Sulphate attack on concrete structure **07**
- (b)** Explain the various properties epoxy material .How the epoxy material can be applied for rehabilitation work. **07**
- OR**
- Q.5 (a)** Draw the free hand sketches of : **07**
- (a) Column Strengthening Concrete Jacket
- (b) Stitching Method of Repairing Wall/Slab Cracks
- (b)** Enlist and explain the desirable properties of repair material. **07**