

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1724904****Date: 20-06-2014****Subject Name: Maintenance and Rehabilitation of Structures****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) Explain the terms: - Maintenance, Repair, Retrofitting, and Rehabilitation. **07**
(b) What is the effect of climate, temperature, chemicals and wear and tear on the structure? **07**
- Q.2** (a) Give the various assessment procedures for evaluating a damaged structure. **07**
(b) Explain in brief about Jacketing and Fibre Reinforced concrete techniques used in maintenance and rehabilitation. **07**
- OR**
- (b) Explain the Following Terms **07**
1. Epoxy resin
2. Special concrete and its application.
- Q.3** (a) Explain important properties of various repair materials. **07**
(b) What do you mean by Epoxy material? What are the various properties of Epoxy materials? Give steps to apply epoxy material for rehabilitation work. **07**
- OR**
- Q.3** (a) Discuss about Chloride attack and Sulphate attack on Concrete. **07**
(b) What are the causes of deterioration of structure? **07**
- Q.4** (a) What is Cathodic protection explain in detail? **07**
(b) Enlist various reasons of failures of corrosion protection system for Bonded post tensioned concrete Structure. **07**
- OR**
- Q.4** (a) What is corrosion mechanism? Explain cover thickness and cracking effect on steel. **07**
(b) How will you restore original strength for **07**
(1) Small cracks in existing masonry.
(2) Large cracks and crushed concrete.
- Q.5** (a) Explain: (Any Two) **07**
1. Corrosion Inhibitors.
2. Dry Mix and Wet Mix Shotcrete.
3. Predictive and preventive maintenance.
(b) Write about steps for repairs to damaged structure due to Chemical Disruption, Marine Exposure and leakage. **07**
- OR**
- Q.5** (a) Describe following repair rehabilitation strategies (Any two) **07**
(a) Enhancing shear strength.
(b) Base isolation.
(c) Flood damaged Structure.
(b) As a Construction Manager What will be the most Crucial step for safety While repairing the existing Structure? . **07**
