

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER – VIII. EXAMINATION – WINTER 2016**

**Subject Code: 180607****Date: 24/10/2016****Subject Name: Repairs & Rehabilitation of Structures ( Department Elective-II )****Time: 02:30 PM to 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) State causes and precautions for distress in structures. **07**  
 (b) Discuss Guniting technique and its applications. **07**
- Q.2** (a) Write short note on permeability of concrete. Explain factors affecting permeability of concrete. **07**  
 (b) Discuss various aspects of durability. What care should be taken to assure good durability in concrete? **07**
- OR**
- (b) Explain briefly the purpose and procedure for the damage assessment. **07**
- Q.3** (a) List various aggressive environments for concrete. How sulphate attack on concrete? **07**  
 (b) Explain the importance of maintenance. Discuss different type of maintenance to the structural elements **07**
- OR**
- Q.3** (a) What is meant by carbonation of concrete? How it is determined in concrete? **07**  
 What are the limitations associated with it?  
 (b) Enlist and explain long term health monitoring techniques. **07**
- Q.4** (a) How do you evaluate repairs, and rehabilitate a structure distressed due to fire and marine exposure? **07**  
 (b) Elaborately Explain about the effect of temperature on concrete. Discuss in detail about the thermal properties of concrete. **07**
- OR**
- Q.4** (a) List out various Non-Destructive test used to determine strength of existing structure. Explain any one of them. **07**  
 (b) Write short note on fiber reinforced concrete. **07**
- Q.5** (a) What is meant by jacketing? Discuss repair and strengthening of columns by jacketing. **07**  
 (b) What are the preliminary investigations before demolition of a structure? Write about protective clothing given before demolition **07**
- OR**
- Q.5** (a) Differentiate between retrofitting and rehabilitation of structure. **07**  
 (b) Explain the mechanism of the following corrosion protection methods.(i) corrosion inhibitors (ii) Cathodic protection. **07**

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