

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII EXAMINATION – WINTER 2015

Subject Code:180607**Date:12/12/2015****Subject Name: Repairs and Rehabilitation of Structures****Time: 2:30pm to 5:00pm****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) Elaborate the causes of distress in concrete structures. **07**
 (b) Explain in short the various methods of demolition of framed reinforced concrete structure. What is implosion and explain its basic principles? **07**
- Q.2** (a) How the corrosion starts in reinforced concrete structures? Elaborate it preventive measures. **07**
 (b) Explain the assessment procedure for inspection and evaluation of damaged structure. **07**
- OR**
- (b) Explain the basic concept of use of expansive cement. Elaborate its functional use. **07**
- Q.3** (a) Explain the term durability of concrete. Also discuss the major causes of inadequate durability. **07**
 (b) What is meant by carbonation of concrete? How it is determined in concrete? What are the limitations associated with it? **07**
- OR**
- Q.3** (a) If the main reinforcement and shear reinforcement of a beam are corroded and needs to be replaced by new bars, what are the basic steps involved in this procedure. **07**
 (b) Discuss the long term health monitoring techniques. **07**
- Q.4** (a) Explain the method of wrapping for retrofitting of structure. List the materials which can be used for wrapping for an existing reinforced concrete beam. Discuss their advantages and disadvantages **07**
 (b) Explain jacketing. Describe various jacketing methods for rehabilitation of columns. **07**
- OR**
- Q.4** (a) Explain the procedure of repair, if the member of structure is under larger deflection. **07**
 (b) Explain the method of Cathodic protection of reinforcement. **07**
- Q.5** (a) What is sulphate attack on concrete? Enlist the methods used to control sulphate attack on concrete. **07**
 (b) Classify the Repair materials based on types of application. **07**
- OR**
- Q.5** (a) Explain the polymer impregnated concrete with its application. **07**
 (b) Explain Guniting and Shotcrete as method of repair. **07**
