

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2017

Subject Code: 2180607

Date: 15/11/2017

Subject Name: Repairs & Rehabilitation of Concrete Structures(Departmental Elective - III)

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) Discuss Ferro cement in brief. **03**
(b) Explain restoration of earthquake damaged masonry Structure. **04**
(c) Explain the assessment procedure for inspection and evaluation of damaged structure. **07**
- Q.2** (a) Explain in brief Shotcrete as method of repair. **03**
(b) Explain factors affecting permeability of concrete. **04**
(c) What is meant by carbonation of concrete? How it is determined in concrete? What are the limitations associated with it? **07**
- OR**
- Q.3** (c) Discuss the long term health monitoring techniques for structures. **07**
(a) What is sulphate attack on concrete? **03**
(b) Discuss Guniting technique and states its applications. **04**
(c) List out various Non-Destructive tests used to determine strength of existing structure. Explain any one of them. **07**
- OR**
- Q.3** (a) Write short note on expansive cement. **03**
(b) Differentiate between retrofitting and rehabilitation of structure. **04**
(c) What is meant by jacketing? Discuss repair and strengthening of columns by jacketing. **07**
- Q.4** (a) What is shore? Enlist different types of shores. **03**
(b) Write a short note on polymer concrete. **04**
(c) Describe factors affecting corrosion of steel in concrete. **07**
- OR**
- Q.4** (a) Explain the role of cover in RCC structures. **03**
(b) Write shot note on vacuum concrete. **04**
(c) Define durability of concrete and explain the major causes of inadequate durability. **07**
- Q.5** (a) Explain concrete repairing by grouting. **03**
(b) Explain various types of cracks. **04**
(c) Classify the repair materials based on type of application. State in details the essential parameters of repair materials. **07**
- OR**
- Q.5** (a) Enlist causes of distress in reinforced concrete structures. **03**
(b) Discuss the thermal properties of concrete in brief. **04**
(c) Explain alkali aggregate reaction. What are the factors promoting it? How it can be controlled? **07**
