

Code No: **RT42014C****R13****Set No. 1****IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018****REPAIR AND REHABILITATION OF STRUCTURES****(Civil Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B************PART-A (22 Marks)**

1. a) Write different types of Cracks in concrete. [4]
- b) What is NDT? [3]
- c) Write the Causes of Failures. [4]
- d) Write the purpose of Admixtures. [4]
- e) What is Grouting? [3]
- f) What is Distress? [4]

PART-B (3x16 = 48 Marks)

2. a) Write the reaction of Sulphates in concrete structures. [8]
- b) Explain about permeability test on concrete. [8]
3. Explain about
(i) RCC behavior under corrosion
(ii) Corrosion activity measurement [16]
4. a) State four reasons due to which structural cracks appear in walls of buildings. [8]
- b) Discuss on Penetration Resistance Method. [8]
5. a) Differentiate between repair and Rehabilitation. [8]
- b) Explain one Rehabilitation technique for slab with one example. [8]
6. a) What is shotcrete? What are the two types of process in Shotcrete? [8]
- b) Explain about under pinning and under water repair. [8]
7. Explain the technique of adding external reinforcement for strengthening with neat sketch. [16]

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R13**Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018

REPAIR AND REHABILITATION OF STRUCTURES**(Civil Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) What is Pitting? [4]
- b) What is UPV? [3]
- c) What are the types of failures? [4]
- d) What are the types of admixtures? [4]
- e) Write different types of Repair Techniques. [3]
- f) Write the different methods of Investigation of structures. [4]

PART-B (3x16 = 48 Marks)

2. Write a note on Alkali Aggregate Reaction. Discuss the factors promoting this reaction and suggest the methods for controlling the same. [16]
3. State four NDT techniques used in investigation for repair works in concrete Structures. Explain briefly. [16]
4. How do you repair a structure distressed due to corrosion? Describe in detail. [16]
5. a) Classify different types of Fly ash with properties and reaction mechanism. [8]
- b) Discuss on Corrosion of Steel Reinforcement. [8]
6. a) What are the stages in dry mix process in shotcrete? [8]
- b) Explain Jacketing technique for column. [8]
7. a) Explain any one method of repairs in RCC slab. [8]
- b) How do you repair a structure distressed due to corrosion? Describe in detail. [8]

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R13**Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018

REPAIR AND REHABILITATION OF STRUCTURES

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) Write on sulphate attack. [4]
- b) Write the purpose of corrosion meter. [3]
- c) Discuss on poor construction practices. [4]
- d) Write briefly on impact echo methods. [4]
- e) Write different equipments used for repairs. [3]
- f) What are the different preliminary test methods? [4]

PART-B (3×16 = 48 Marks)

2. a) Discuss on carbonation. [8]
- b) Explain about temperature and their causes in concrete. [8]
3. a) Discuss cell potential and resistivity. [8]
- b) Explain about mapping of data. [8]
4. How do you evaluate repair, and rehabilitate a structure distressed due to fire and marine exposure? [16]
5. State the any four non conventional materials required for repairs. Describe the characteristics of any one. [16]
6. a) Give a brief note on shoring and underpinning in demolition. [8]
- b) Discuss on underwater concreting. [8]
7. Describe the steps in the assessment procedure for evaluate damages in a structure and to carry out rehabilitation work. [16]

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R13**Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018

REPAIR AND REHABILITATION OF STRUCTURES

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

*Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

PART-A (22 Marks)

1. a) Write on Chloride attack. [4]
- b) Write the importance of Rebar locator. [3]
- c) How can you rectify Fire damage? [4]
- d) Discuss on moisture effects in concrete. [4]
- e) How to do under water repair? [3]
- f) Define rehabilitation. [4]

PART-B (3x16 = 48 Marks)

2. Explain about the Physical processes of deterioration like Freezing and Thawing. [16]
3. a) Explain about PULL-OFF TEST. [8]
- b) Explain with neat sketch about UPV. [8]
4. Explain with one case study about Poor quality of material and Poor Construction practices. [16]
5. a) With chemical equation explain the mechanism of Corrosion. [8]
- b) What are the techniques required for repairing cracks. [8]
6. Explain the methods of with types and applications.
(i) Shotcreting
(ii) Guniting [16]
7. Describe about the inspection to be carried out during and after the construction of structure. [16]