

Code No: RT42014C

R13

Set No. 1

IV B.Tech II Semester Supplementary Examinations, July/August - 2017

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) Explain in detail the corrosion mechanism and write the methods of corrosion protection on concrete structures. [4]
- b) What is the effect of selecting poor quality materials for construction? [4]
- c) Write short notes on (i) Pull out test (ii) Corrosion meter [4]
- d) What are the adverse effects of faulty design of slab and beams on a building? [3]
- e) What is the difference between admixture and an additive? What are the uses of admixtures? [4]
- f) How you find out the corrosion potential of reinforcement using electrical resistivity method? [3]

PART-B (3x16 = 48 Marks)

- 2 a) Discuss the freezing-Thawing of concrete and the preventive measures to be taken to avoid freezing and thawing effect on concrete. [8]
- b) Explain in detail various causes of deterioration or distress in concrete structures. [8]
- 3 What is the need for Non destructive methods of testing of concrete? Write the various Non destructive testing methods available to test the concrete strength and other characteristics. [16]
- 4 a) What are different types of failure of buildings and explain the causes of failures? [8]
- b) What is faulty design and how it leads to the failure of a building? [8]
- 5 a) What are mineral and chemical admixtures? Write the advantages and disadvantages in using any two mineral and chemical admixtures in concrete. [10]
- b) Write short note on (i) Accelerators (ii) Retarders [6]
- 6 a) Discuss in detail the shotcreting methods. Write the advantages and disadvantages of shotcreting. [8]
- b) Explain the column jacketing method with the help of sketches [8]
- 7 a) Explain in your own words the repair of RCC distressed beams by externally bonded steel plates with neat sketches. [10]
- b) Discuss the preliminary and detailed inspections of concrete structures. [6]