

Code No: 09A80106

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, May - 2013

Rehabilitation and Retrofitting of Structures

(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks



- 1.a) What are the three main causes of distress in Reinforced Concrete structures?
b) Describe each cause and explain what type of distress is experienced because of it?
c) What type of preventive measure would have avoided these distresses? [15]
- 2.a) Distinguish between Structural and Non-structural damage in a multi storey structure.
b) Sketch and show different types of structural cracks in a beam.
c) Discuss the relative seriousness of the cracks that you have sketched indicating the reasons for its occurrence. [15]
- 3.a) What are the causes of corrosion of steel in Reinforced Concrete structures?
b) What are the methods of protecting steel in RCC structures against corrosion?
c) Describe the relative merits of the methods suggested by you. [15]
- 4.a) On what basis the structures are designed to withstand fire?
b) How does a RCC structure behave under increasing temperature loads with respect to load carrying capacity and elasticity?
c) Describe methods of protecting buildings against fire. [15]
- 5.a) What are the various aspects that will be covered during inspection of a damaged building?
b) List the various tests used and types of tests undertaken preliminary assessment of damages.
c) What is the role of NDT in qualifying the structure after retrofitting? [15]
- 6.a) What is under-pinning? To which component of building this refers to?
b) List the sequence of operations involved in a typical underpinning operation.
c) List the various equipments used in an underpinning operation. [15]
- 7.a) Distinguish between repair and retrofitting.
b) Distinguish between local and global retrofitting strategy for an affected structure.
c) Describe the various steps involved in retrofitting a column in a building. [15]
- 8.a) What do you understand by "health monitoring of structure"?
b) What are Sensors and at which location they are used?
c) What are the parameters that are normally monitored in Corrosion studies and how the results are interpreted? [15]

