

C.U.SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Repairs and Rehabilitation of Structures

Subject Code: 4TE07RRS1

Branch: B.Tech (Civil)

Semester: 7

Date: 22/04/2022

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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- Q-1 Attempt the following questions (14)**
- a) Which cement is appropriate for repairing cracks in RCC work? (1)
 - b) What is the content of chlorides in concrete as per IS 456 – 2000? (1)
 - c) What is the full form of NDT? (1)
 - d) Define distress in structure. (1)
 - e) What is epoxy? (1)
 - f) The most common method of foundation rehabilitation is..... (1)
 - g) Which is the best fire resistance aggregate? (1)
 - h) Define condition assessment. (1)
 - i) Which material is used to protect the steel from rusting? (1)
 - j) Define durability of concrete. (1)
 - k) Define retrofitting. (1)
 - l) Define grouting. (1)
 - m) What is the minimum width of routing for sealing of cracks in concrete by epoxy? (1)
 - n) Define autogeneous healing. (1)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- A) Explain models of deterioration of concrete. (7)
 - B) Explain stages of condition survey in brief. (7)
- Q-3 Attempt all questions (14)**
- A) Explain in short the various methods of demolition of framed reinforced concrete structure. What is implosion and explain its basic principles? (7)
 - B) Explain the major causes of inadequate durability. (7)
- Q-4 Attempt all questions (14)**
- A) Explain Rebound hammer test. (7)
 - B) Explain complete process of concrete gunning. In which conditions gunning is preferred over jacketing? (7)



- Q-5** **Attempt all questions** **(14)**
- A) Explain shoring and underpinning technique for foundation rehabilitation. **(7)**
- B) Explain CHEMICAL ADMIXTURE with their use, advantage and application. **(7)**
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- Q-6** **Attempt all questions** **(14)**
- A) What are causes of cracks in concrete? **(7)**
- B) Explain the conditions of distress for which the following technique/method can be adopted for repair work. **(7)**
- a. Vacuum concrete
- b. Foamed concrete
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- Q-7** **Attempt all questions** **(14)**
- 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 **(7)**
- B) Explain permeability of concrete. **(7)**
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- Q-8** **Attempt all questions** **(14)**
- A) Explain the methodology to repair a earthquake deficient masonry structure. **(7)**
- B) Explain precautionary measures in demolition works. **(7)**

