BE civil Sem VIII R-19 c-scheme   19-05-2025

Duration: 3hrs   Marks:80

Instructions.: (1) Question No 1 is **Compulsory**.
                      (2) Attempt any **three** questions out of the remaining five.
                      (3) **Each** full question carries **20** marks.

Q.1   Answer any FOUR:
    a   What are the different stages involved in condition survey of a building?   (05 M)
    b   Discuss the different physical causes of deterioration of concrete structures.   (05 M)
    c   What is the cause of lamellar tearing in steel structures? How it can be prevented?   (05 M)
    d   How does Rebound hammer test help in assessing the quality of concrete?   (05 M)
    e   Explain base isolation.   (05 M)

Q.2 a   Discuss the different semi-destructive tests conducted for strength assessment of concrete.   (10 M)
    b   Explain the following methods of crack repair with neat sketches.   (05 M)
         (i) Routing and sealing
         (ii) Stitching
    c   List out the applications of ferrocement as a repair material?   (05 M)

Q.3 a   Explain the dry mix and wet mix processes of shotcreting.   (10 M)
    b   Briefly explain plastic shrinkage cracks. What are the measures taken to reduce plastic shrinkage cracks?   (05 M)
    c   Write a note on cathodic protection.   (05 M)

Q.4 a   Briefly explain fibre wrapping and plate bonding techniques of retrofitting.   (10 M)
    b   List out the various tests conducted for corrosion potential assessment. Briefly explain Half Cell Potential survey.   (05 M)
    c   Explain injection grouting?   (05 M)

Q.5 a   Explain the physical and mechanical properties of Polymer Modified Mortar/Concrete. Enlist the applications of PMM/PMC.   (10 M)
    b   What are the causes of deterioration of steel structures? Suggest some remedial measures.   (05 M)
    c   Explain underpinning as a foundation rehabilitation technique.   (05 M)

Q.6   Briefly explain the following:
    a   Passivators for reinforcement protection   (05 M)
    b   Shoring and its types   (05 M)
    c   Autogenous healing of concrete   (05 M)
    d   Repair of heritage structures   (05 M)

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