

BE - CIVIL / Sem - VIII / R - 19 / SH - 2025 / 22/08/2025

Duration: 3 Hours

Total Marks: 80

Instructions:

QP Code: 91555

1. Question No.1 is **compulsory**.
2. Answer any **three** from the remaining.
3. **Each** full question carries **20 marks**.

- Q. 1)** Answer any **four** 20 M
- a) Explain shotcrete method for the repair.
 - b) Discuss the use of ferrocement for the repair work.
 - c) Write a note on use of chemical rust remover for the corroded reinforcement.
 - d) Why maintenance of structures is essential and important?
 - e) What are the crack measurement techniques? Discuss any one.
 - f) Write a note on brittle fracture & lamellar tearing in structural steel.
- Q. 2)** Answer **both** the questions. 10 M
- a) Discuss shoring method of foundation rehabilitation, with neat sketches. 10 M
 - b) Discuss, in detail, about probe test & pull-out test on concrete. 10 M
- Q. 3)** Answer **both** the questions. 10 M
- a) Discuss cathodic protection method for the corrosion repair. 10 M
 - b) Using neat sketches, discuss non-destructive testing of concrete using UPV method. 10 M
- Q. 4)** Answer **both** the questions. 10 M
- a) Explain concrete repair using plate bonding & fibre wrap techniques. 10 M
 - b) Discuss earthquake damages of structures, their retrofitting & restoration. 10 M
- Q. 5)** Answer **both** the questions. 10 M
- a) Enlist various types of corrosion of structural steel. Discuss any one in detail. 10 M
 - b) Discuss drilling & plugging method and gravity filling method of crack repair. 10 M
- Q. 6)** Answer the following questions. 05 M
- a) Explain repair & rehabilitation of heritage structures. 05 M
 - b) Write a note on plastic shrinkage cracks & thermal cracks in concrete structures. 05 M
 - c) Discuss about physical causes of concrete deterioration. 05 M
 - d) Write a note on epoxy injection method of crack repairs. 05 M

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