

[Time: Three Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any three questions from the remaining five questions.
 3. Figures to right indicate full marks.
 4. Draw neat sketches wherever required.

1. A. Write short note on thermal protection coatings. **5**
- B. Explain in brief factors affecting rebound number. **5**
- C. Explain in detail properties of moisture barrier system. **5**
- D. Write a short note on cathodic protection. **5**
2. A. What are the objectives of grouting? Explain various types of injection grouting. **10**
- B. Write a detailed note on Pull-out test, with neat sketches. **10**
3. A. Explain about any five "Preventive methods" used in concrete structures to stop cracks and deterioration of concrete structures. **10**
- B. Explain the above-grade and below-grade water proofing of concrete structures. **10**
4. A. Write a brief not on semi destructive testing methods and classify them on the basis of field and laboratory tests. **10**
- B. State the corrosion tests for ASTM bar and explain any on in detail. **10**
5. Write a short note on **any five** **20**
 - a. Structural audit
 - b. Corrosion control in steel bars
 - c. Shortcreting
 - d. Cracking and spelling
 - e. Rust staining
 - f. Polymer modified mortars
6. A. Discuss carbonation test & chloride test. **10**
- B. What are the various causes of seepage & leakage in concrete structures? **5**
- C. Write a note on statutory legislation & obligation for concrete structure maintenance. **5**
