

Time : 3 Hrs.

Marks : 80

PLEASE NOTE:

1. Question No.1 is compulsory.
2. Attempt any **three** out of remaining five questions.
3. Figure to the right indicates full marks.
4. Illustrate answer with proper sketches.

- Q 1.** Answer any **four** of following 20
- a Write a short note on ultrasonic pulse velocity tests,
 - b Explain the use of epoxy mortars and concrete as materials for repair
 - c Write a short note on Shotcreting,
 - d Comment on this statement: 'Post repair maintainance of structures is an important condition of contract'.
 - e Explain base isolation method.
- Q 2.** a Explain why the RCC structures require strengthening. It is possible to mitigate some of these reasons. 10
- b Write a note on repair and rehabilitation of heritage structures. 10
- Q 3.** a What are the important stages of Condition Survey for identification and estimation of damage. 10
- b Explain the FRP wrapping technique used for strengthening of RCC structures 10
- Q 4.** a What are important parameters for repair materials 10
- b You are appointed as a consultant to frame the repair contract. What are the essential conditions you will include in contract? 10
- Q 5.** a Explain Important factors to be considered for selection of repair methods. 10
- b Explain how you will carry out Repair of water retaining structures, 10
- Q 6.** Explain any **two** tests from following. 20
- a Rebound hammer test
 - b Core sampling and testing,
 - c Half-cell potentiometer test