

# 22602

**12526**

**3 Hours / 70 Marks**

Seat No. 

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- Instructions* –
- (1) All Questions are *Compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answer with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following: **10****
- a) State any four advantages of maintenance and repair.
  - b) Enlist different types of maintenance.
  - c) Write any two advantages of half cell potential meter.
  - d) Enlist any four joint sealant materials.
  - e) Enlist two causes of dampness in wall.
  - f) Give the two situations where Jacketing is done.
  - g) State any two causes of distress in a structure.

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- 2. Attempt any THREE of the following: 12**
- a) Explain in brief post monsoon maintenance.
  - b) Describe an approach of effective maintenance management along with flow diagram.
  - c) State advantages and disadvantages of NDT.
  - d) Write application of following NDT methods :-
    - i) Rebound concrete hammer
    - ii) Ultrasonic pulse velocity meter
    - iii) Rebar locator
    - iv) Chloride Test.
- 3. Attempt any THREE of the following: 12**
- a) Explain any four factors influencing the types of materials to be used for maintenance and repair.
  - b) Enlist the four situations when adhesive materials are suggested.
  - c) Why and when the surface coating material for concrete are suggested.
  - d) Suggest any four water proofing material along with the situations where they are used.
- 4. Attempt any THREE of the following: 12**
- a) State each two advantages and disadvantages of rebound hammer test.
  - b) Describe structural and nonstructural cracks.
  - c) Suggest any two materials used as anti corrosion coating materials. Explain in detail any one of them.
  - d) Write in brief the necessity and importance of budget estimation.
  - e) Explain various causes of wall cracks and show their probable location with neat sketch.

**5. Attempt any TWO of the following:****12**

- a) Explain step by step procedure of ferrocement water proofing technique of roof slab.
- b) State the step wise procedure to repair corrosion in affected RCC elements.
- c) Write the step by step procedure for the following repair methods :-
  - i) Gunitting
  - ii) Jacketing.

**6. Attempt any TWO of the following:****12**

- a) State the eight causes of foundation settlement and explain improvement technique by compaction.
  - b) Explain step by step procedure followed in structural auditing.
  - c) Prepare list of minimum twelve important information one can collect through visual inspection of structure.
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