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6E3037

Roll No. _____

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B. Tech. VI Sem. (Main & Back) Exam. May/June-2014

Civil Engineering

6CE6.1 Elective Repair and Rehabilitation of Structures

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks: 24

Instructions to Candidates:-

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. _____

2. _____

UNIT-I

Q.1 (a) Explain the effects of chlorides and sulphate attacks on concrete and their preventive measures. [8]

(b) Give detail of alkali reaction on the concrete with mechanism of (AAR) and the influencing factor. [8]

OR

Q.1 (a) Discuss the half cell Potential Methods with its silent factors. [8]

(b) Draw a neat diagram of corrosion process with its prevention and effects. [8]

UNIT-II

- Q.2 (a) Differentiate destructive testing and non destructive testing of concrete. [8]
- (b) Explain ultra sonic pulse velocity test for measuring the compressive strength of slab or wall. [8]

OR

- Q.2 Write down the complete procedure of following Tests. [16]
- (a) Rebound hammer Test.
- (b) Pull out Test.

UNIT-III

- Q.3 (a) What are the self-curing compound? Also mention the required properties. [8]
- (b) What are the different patching material used for repair? Give small description. [8]

OR

- Q.3 (a) Give the types of polymer resin based coating in detail. [8]
- (b) Make a list of water proofing material and their use and selection. [8]

UNIT-IV

- Q.4 (a) Explain the function of externally bonded plates with neat diagrams. [8]
- (a) Write down the complete process of Jacketing and necessary precaution taken. [8]

OR

Q.4 Write down a short note on following:

[16]

- (a) Grouting
- (b) Shotcrete
- (c) Under water repair
- (d) Equipments for Jacketing.

UNIT-V

Q.5 (a) Make a list of process required for the maintenance of bridge piers.

[8]

(b) A case study of canal rehabilitation.

[8]

OR

Q.5 Write a short note on following:

[16]

- (a) Distress in Building.
- (b) Primary test methods.
- (c) Effect of chlorides.
- (d) F & T abrasion.