

Unit 3 - Week 1

Course outline

How does an NPTEL online course work?

Prerequisite Assignment

Week 1

- Prologue
- Corrosion of embedded metal; Significance and fundamentals of corrosion
- Corrosion of embedded metal; Carbonation-induced and chloride-induced corrosion

Quiz : Assignment 1

Maintenance and Repair of Concrete Structures : Week 1 Feedback Form

Lecture Materials

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

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Assignment 1

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) Steel passivates in concrete due to it's 1 point

- High pH
- Low permeability of concrete
- High compressive strength
- All of the other choices

No, the answer is incorrect. Score: 0

Accepted Answers: High pH

2) What are the essential elements for the corrosion process 1 point

- Moisture
- Oxygen
- Chloride
- Carbon dioxide

No, the answer is incorrect. Score: 0

Accepted Answers: Moisture Oxygen

3) What are the essential parts of a corrosion cell 1 point

- Anode
- Cathode
- Electronic and ionic conductor
- Only anode and cathode

No, the answer is incorrect. Score: 0

Accepted Answers: Anode Cathode Electronic and ionic conductor

4) What can cause local differences in potentials of steel 1 point

- Nonuniformity of the metal
- Nonuniformity of the electrolyte
- Nonuniformity of the physical conditions
- None of the other choices

No, the answer is incorrect. Score: 0

Accepted Answers: Nonuniformity of the metal Nonuniformity of the electrolyte Nonuniformity of the physical conditions

5) Carbonation-induced corrosion is localised in nature 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: False

6) Airborne chlorides can lead to corrosion 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: True

7) Stopping chloride ingress after corrosion initiation cannot halt chloride-induced corrosion 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: True

8) Carbonation-induced corrosion is not a problem in coastal areas 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: False

9) When it comes to corrosion inhibitors, higher dosage is always better 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: False

10) In reinforced concrete systems, steel plays the role of both electronic and ionic conductors 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: False

11) The typical in-service prestress level can reduce the chloride threshold of prestressing steel 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: True

12) Cold working can decrease the tensile strength and increase the corrosion resistance 1 point

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: False

13) Which of the following statements is correct? 1 point

- Critical chloride threshold is same for all steels
- Critical chloride threshold depends only on the steel
- Critical chloride threshold depends only on the cementitious system
- Critical chloride threshold is a function of both steel and cementitious system

No, the answer is incorrect. Score: 0

Accepted Answers: Critical chloride threshold is a function of both steel and cementitious system

14) Match the column 1 point

	Rebars		Properties
A	Ribbed bars	i	Poor corrosion resistance
B	Quenched and self tempered steel	ii	Good resistance to the initiation of corrosion
C	Cold twisted deformed bars	iii	TM ring
D	Stainless steel	iv	Enhanced bond between steel and concrete

- A – iv, B – i, C – ii, D - iii
- A – iv, B – iii, C – iv, D - ii
- A – iv, B – ii, C – i, D - iii
- A – iv, B – iii, C – i, D - ii

No, the answer is incorrect. Score: 0

Accepted Answers: A – iv, B – iii, C – i, D - ii

15) TM-Ring test is a simple test to check 1 point

- Quality control during manufacturing of steel
- Tensile strength of the steel
- Discontinuities in tempered martensite ring
- None of the other choices

No, the answer is incorrect. Score: 0

Accepted Answers: Quality control during manufacturing of steel Discontinuities in tempered martensite ring