

Unit 2 - Prerequisite Assignment

Course outline

How does an NPTEL online course work?

Prerequisite Assignment

○ Quiz : Assignment 0

Week 1

Week 2

Week 3

Week 4

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Week 6

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Assignment 0

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

Due on 2020-02-05, 23:59 IST.

Note : This assignment is only for practice purpose and it will not be counted towards the Final score

1) In concrete, the primary purpose of cement is to

1 point

- Fill the space between aggregates
- Bind the aggregates
- Protect the aggregates from chemical attack
- All of the other choices
- None of the given choices

No, the answer is incorrect.
Score: 0

Accepted Answers:
Bind the aggregates

2) Decreasing the water content in concrete and use of superplasticizers can ensure more compact and durable concrete, provided the proportion of other ingredient remain same

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

3) Incorporation of supplementary cementitious materials such as fly ash, slag, metakaolin, rice husk ash, bagasse ash, silica fume, calcined clay, etc. can enhance the durability of concrete provided the curing is done adequately

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

4) The coefficient of thermal expansion of concrete and steel are in similar range. Also, the highly alkaline nature of concrete helps in preventing corrosion of the embedded steel reinforcement

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

5) Compressive strength of concrete is typically more than its tensile strength

1 point

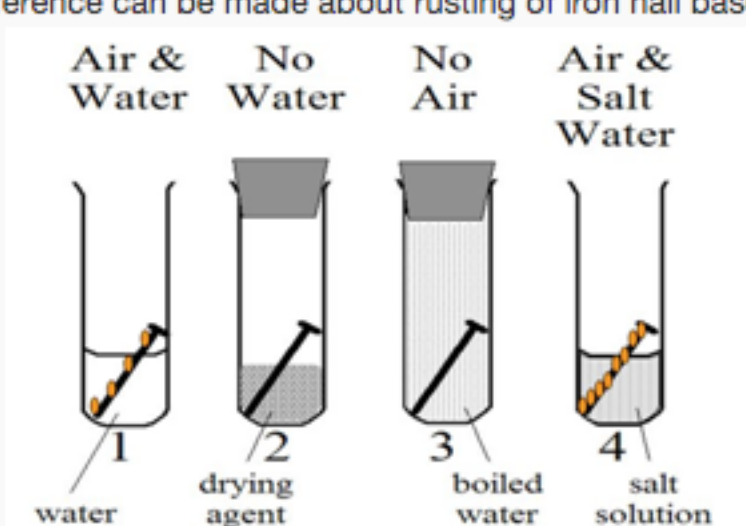
- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

6) What inference can be made about rusting of iron nail based on the following image?

1 point



- Air and water are required for corrosion of iron to occur
- Only water and salt are required for corrosion of iron to occur
- Presence of salt can increase corrosion rate of iron
- Water, air and salt are required for corrosion of iron to occur

No, the answer is incorrect.
Score: 0

Accepted Answers:
Air and water are required for corrosion of iron to occur
Presence of salt can increase corrosion rate of iron

7) Match the material properties with its definition

5 points

	Material properties		What does it mean?
(i)	Hardness	1	The ability of a material to absorb energy and plastically deform without fracturing.
(ii)	Elasticity	2	The tendency of a solid material to move slowly or deform permanently under the influence of persistent mechanical stresses.
(iii)	Toughness	3	The ability of a material to resist plastic deformation, usually by indentation.
(iv)	Creep	4	Ability to opposes the deformation or breakdown of material in the presence of external forces or load.
(v)	Strength	5	Material returns to its original shape after having been stretched out or altered by force.

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- (i) (2)
- (ii) (5)
- (iii) (3)
- (iv) (1)
- (v) (4)

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- (i) (3)
- (ii) (5)
- (iii) (4)
- (iv) (2)
- (v) (1)

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- (i) (3)
- (ii) (5)
- (iii) (1)
- (iv) (2)
- (v) (4)

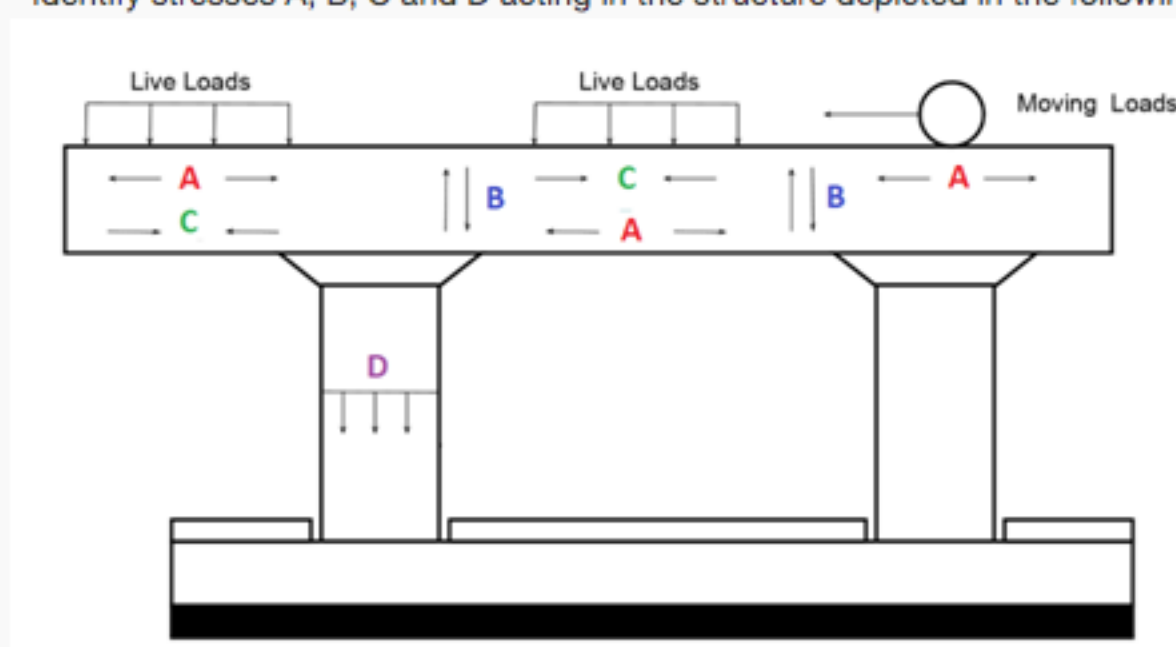
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- (i) (3)
- (ii) (5)
- (iii) (1)
- (iv) (4)
- (v) (2)

No, the answer is incorrect.
Score: 0

Accepted Answers:
(i) (3)
(ii) (5)
(iii) (1)
(iv) (2)
(v) (4)

8) Identify stresses A, B, C and D acting in the structure depicted in the following figure

1 point



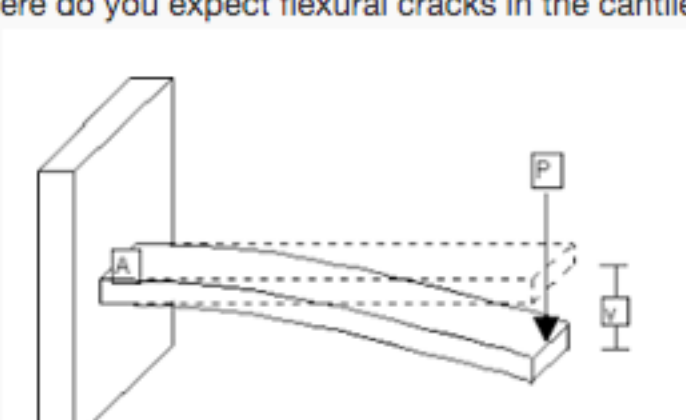
- A-Compressive; B-Shear; C-Tensile; D-Shear
- A-Shear; B-Compressive; C-Tensile; D-Compressive
- A-Tensile; B-Shear; C- Compressive; D-Compressive
- A-Tensile; B-Shear; C- Compressive; D-Shear

No, the answer is incorrect.
Score: 0

Accepted Answers:
A-Tensile; B-Shear; C- Compressive; D-Compressive

9) Where do you expect flexural cracks in the cantilevered member shown in the following figure?

1 point



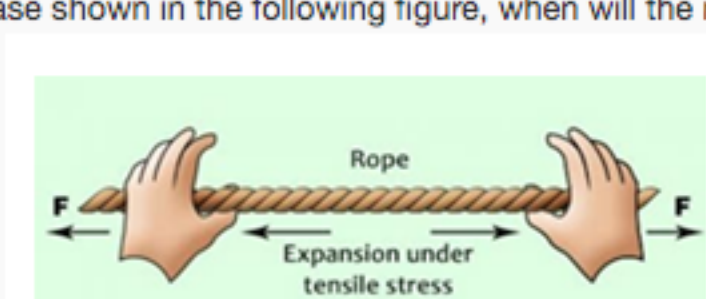
- On top of the member; close to support
- On top of the member; close to free end
- At the bottom of the member; close to support
- At the bottom of the member; close to free end

No, the answer is incorrect.
Score: 0

Accepted Answers:
On top of the member; close to support

10) In the case shown in the following figure, when will the rope break?

1 point



- Tensile strength > Tensile stress
- Shear stress > Shear strength
- Tensile stress > Tensile strength
- Either 'Tensile strength > Tensile stress' or 'Shear stress > Shear strength'

No, the answer is incorrect.
Score: 0

Accepted Answers:
Tensile stress > Tensile strength

11) Which among the following is an example of routine condition assessment?

1 point

- Doing a blood test when sick
- Eating vitamins everyday
- Doing an yearly eye-check up
- Taking bath daily

No, the answer is incorrect.
Score: 0

Accepted Answers:
Doing an yearly eye-check up