

Unit 10 - Week 9

Course outline

How does an NPTEL online course work?

week 1

week 2

Week 3

Week 4

Week 5

Week 6

Week 7

week 8

Week 9

Sticking vis-a-vis Depression Behaviour

Role of Chemistry on Bulging or Depression Tendency : Part I

Role of Chemistry on Bulging or Depression Tendency : Part II

Effect of Cast Grain Size

Brittle Temperature Regions

Quiz : Assignment 9

Week 9 Feedback :Steel Quality: Role of Secondary Refining and Continuous Casting

Week 10

Week 11

Week 12

Download Videos

Assignment 9

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

Due on 2020-04-01, 23:59 IST.

Either One or Two Solutions are Correct for Each Question .

When One Solution is Correct , choice of only the Correct One will give ONE mark. Choice of more than One will result in ZERO mark .

When Two Solutions are Correct , choice of only the TWO CORRECT will give ONE mark . Choice of more than Two will result in ZERO mark . One Correct Solution will give 0.5 mark

1) The following may generate more shrinkage during solidification of steel :

1 point

$L \rightarrow \delta$

$L \rightarrow \gamma$

$\delta \rightarrow \gamma$

Ferrostatic force

No, the answer is incorrect.

Score: 0

Accepted Answers:

$L \rightarrow \gamma$

$\delta \rightarrow \gamma$

Chemistry of steel decides whether it will solidify as ferrite (δ) or austenite (γ) or as $\delta + \gamma$. It is known that γ is more strong than δ , and segregation is more in γ

2) steel with 0.05 % C will have following effect on solid shell :

1 point

Strong but thin

Thick but weak

Strong and thick

Thin and weak

No, the answer is incorrect.

Score: 0

Accepted Answers:

Thick but weak

3) steel with 0.12 % C will have following effect on solid shell :

1 point

Strong but thin

Thick but weak

Strong and thick

Thin and weak

No, the answer is incorrect.

Score: 0

Accepted Answers:

Strong and thick

4) steel with 0.60 % C will have following effect on solid shell :

1 point

Strong but thin

Thick but weak

Strong and thick

Thin and weak

No, the answer is incorrect.

Score: 0

Accepted Answers:

Strong but thin

During solidification , ferrostatic force pushes solid shell towards mould , but shrinkage forces it away from mould . Based on which strain is larger , solidification behaviour of a steel e.g. " sticking and bulging " or " shrinking " type is decided .

5) steel with 0.05 % C will have following solidification characteristic :

1 point

Sticking to mould and bulging below mould

Shrinking

No, the answer is incorrect.

Score: 0

Accepted Answers:

Sticking to mould and bulging below mould

6) steel with 0.12 % C will have following solidification characteristic :

1 point

Sticking to mould and bulging below mould

Shrinking

No, the answer is incorrect.

Score: 0

Accepted Answers:

Shrinking

7) steel with 0.60 % C will have following solidification characteristic :

1 point

Sticking to mould and bulging below mould

Shrinking

No, the answer is incorrect.

Score: 0

Accepted Answers:

Sticking to mould and bulging below mould

8) The following steel normally has relatively large cast grains :

1 point

0.05 % C

0.12 % C

0.30 % C

0.60 % C

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.12 % C

9) Brittleness of cast steel around 650 – 700 C is normally associated with :

1 point

Inter-columnar crack

Crack along γ grains

None of this

No, the answer is incorrect.

Score: 0

Accepted Answers:

Crack along γ grains

10) Brittleness of cast steel around 650 – 700 C is normally found in :

1 point

0.05 % C

0.12 % C

0.30 % C

0.60 % C

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.12 % C