

Unit 9 - Week 8

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

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Week 7

Week 8

● Lecture 36: Intermixing in Tundish

● Lecture 37: Modeling Consideration For Inclusion Removal in Tundish

● Lecture 38: Modeling Consideration For Inclusion Removal in Tundish-II

○ Lecture 39: Case Studies in Modeling of Tundish Steelmaking-1

● Lecture 40: Case Studies in Modeling of Tundish Steelmaking-2

○ Quiz : Assignment 8

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Assignment 8

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

Due on 2020-03-25, 23:59 IST.

1) What is/are the method(s) to avoid intermixed grade in tundish ? 1 point

- Stopping the caster
- Using Flying tundish change
- Use of grade separator plate
- All of the above

No, the answer is incorrect. Score: 0

Accepted Answers: All of the above

2) Source(s) of inclusion particles is/are 1 point

- Deoxidation product
- Refractory lining erosion
- Reoxidation product
- All of the above

No, the answer is incorrect. Score: 0

Accepted Answers: All of the above

3) Factors affecting inclusion(s) transport and removal is/are 1 point

- Metal flow rate
- Inclusion size
- Flow control devices
- All of the above

No, the answer is incorrect. Score: 0

Accepted Answers: All of the above

4) Origins of exogenous macro inclusions is/are 1 point

- Entrapment of slag particles due to high turbulence
- Erosion of refractory lining
- Reoxidation product
- All of the above

No, the answer is incorrect. Score: 0

Accepted Answers: All of the above

5) If 5000 inclusion particles come from ladle to tundish during filling operation. 500 inclusion particles escape from tundish outlets, then the percentage inclusion removal efficiency of tundish will be 1 point

- 90 %
- 80 %
- 10 %
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: 90 %

6) The ratio of inertial to surface tension forces is known as 1 point

- Froude Number
- Weber Number
- Reynold Number
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: Weber Number

7) It is impossible to establish the similarity of.....between Perspex models operated with hot water and an actual steel processing unit. 1 point

- Kinematic
- Dynamic
- Thermal
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: Thermal

8) The phenomenon of entrainment of a lighter liquid into a bulk heavier liquid is known as..... 1 point

- Forced convection
- Natural convection
- Conduction
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: Natural convection

9) If $\rho=8523-0.8358T$ characteristics length and velocity are 1.042 m and 0.07 m/s, density at 1853 K is 7000 kg/m^3 , then Gr/Re^2 is equivalent to 1 point

- 0.25 ΔT
- 0.30 ΔT
- 0.40 ΔT
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: 0.25 ΔT

10) Relative Reynolds number is given by 1 point

(Where ρ , u , μ , d_p and U_p are molten metal density, velocity, viscosity, particle diameter and velocity respectively)

- $\frac{\rho(u_p - u)d_p}{\mu}$
- $\frac{\rho u_p d_p}{\mu}$
- $\frac{\rho u d_p}{\mu}$
- None of the above

No, the answer is incorrect. Score: 0

Accepted Answers: $\frac{\rho(u_p - u)d_p}{\mu}$