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Courses » Theory of Production Processes

Announcements **Course** Ask a Question Progress Mentor

Unit 4 - Week 3

Course outline

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Week 1

Week 2

Week 3

- Lecture 11: Gating system design: Types of gates
- Lecture 12: Gating system design: Pouring time calculation
- Lecture 13: Introduction to riser design
- Lecture 14: Riser design methods
- Lecture 15: Problem solving on gating design and riser design methods
- Quiz : Assignment 3
- Feedback Week-3
- Solution of assignment 3

Assignment 3

The due date for submitting this assignment has passed. **Due on 2018-02-14, 23:59 IST.**

Submitted assignment

1) In casting, gating ratio is defined as the ratio of 1 point

- sprue area: total runner area: total gate area
- total gate area: sprue area: total runner area
- total runner area: sprue area: total gate area
- total runner area: total gate area: sprue area

No, the answer is incorrect.
Score: 0

Accepted Answers:
sprue area: total runner area: total gate area

2) In which of the gating system molten metal flows into the mould cavity due to the adverse effect of gravity? 1 point

- Top gating
- Bottom gating
- Parting gating
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Bottom gating

3) In gating system, sprue is usually tapered to 1 point

- Avoid air aspiration effect
- Quick fill the mould cavity
- Minimize the temperature

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4) The gating ratio of 1:2:4 is used to design the gating system for magnesium alloy casting. This gating ratio refers to the cross-section areas of the various gating elements as given below: **1 point**

(i) Runner
(ii) In gates
(iii) Down sprue

The sequence of the above elements in the ratio 1:2:4 is

i-ii-iii
 i-iii-ii
 ii-iii-i
 iii-i-ii

No, the answer is incorrect.
Score: 0

Accepted Answers:
iii-i-ii

5) A mould having dimensions $100 \text{ mm} \times 90 \text{ mm} \times 20 \text{ mm}$ is filled with molten metal through a gate with height 'h' and cross-sectional area A, the mould filling time is t_1 . The height is now quadrupled and the cross-sectional area is halved. The corresponding filling time is t_2 . The ratio t_2/t_1 is **1 point**

3
 1
 4
 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

6) For a constant volume, the shape of riser that has minimum surface area exposed for heat transfer is **1 point**

Cylindrical
 Cubical
 Rectangular
 Hexagonal

No, the answer is incorrect.
Score: 0

Accepted Answers:
Cylindrical

7) Riser is designed so as to **1 point**

Freeze after the casting freezes
 Freeze before the casting freezes
 Freeze at the same time as the casting
 Minimize the time of pouring

No, the answer is incorrect.
Score: 0

Accepted Answers:

Freeze after the casting freezes

8) Chills are made by those metal having

1 point

- Higher melting point than that of cast metal
- Lower melting point than that of cast metal
- Equal melting point as that of cast metal
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Higher melting point than that of cast metal

9) A cast steel slab of dimension $30 \times 20 \times 5$ cm is poured horizontally using a side riser. The riser is cylindrical in shape with diameter and height, both equal to D. The freezing ratio of the mould is

1 point

- $8D/75$
- $4D/75$
- $75/8D$
- $75/4D$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$8D/75$

10) A mould has a down sprue whose length is 20 cm and the cross-sectional area at the base of down sprue is 1 cm^2 . The down sprue feeds a horizontal runner leading into the mould cavity of volume 1000 cm^3 . The time required to fill the mould cavity will be

1 point

- 4.05 sec
- 5.05 sec
- 6.05 sec
- 7.25 sec

No, the answer is incorrect.

Score: 0

Accepted Answers:

5.05 sec

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