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Courses » Theory of Production Processes

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## Unit 10 - Week 9

### Course outline

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- Lecture 41: Classification of joining processes
- Lecture 42: Heat flow in welding
- Lecture 43: Metallurgy of fusion welds
- Lecture 44: Heat affected zone in welding
- Lecture 45: Heat treatment

### Assignment 9

The due date for submitting this assignment has passed. **Due on 2018-03-28, 23:59 IST.**

#### Submitted assignment

1) In Autogeneous joining 1 point

- No filler material is added during joining
- Filler material used to provide the joint is the same as the parent material
- A filler material different from the parent material is used
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

No filler material is added during joining

2) Arc, gas and thermit welding fall under the category of 1 point

- Solid-liquid state welding processes
- Solid state welding processes
- Fusion welding processes
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fusion welding processes

3) Efficiency of heat source is defined as 1 point

- Energy transfer to the work piece × Energy generated by the heat source
- Energy transfer to the work piece / Energy generated by the heat source

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Solution of assignment 9

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Score: 0

Accepted Answers:

*Energy transfer to the work piece / Energy generated by the heat source*

4) Which of the following zone lies next to the fusion boundary zone? **1 point**

- Grain refined zone
- Partially transformed zone
- Spherodized carbide zone
- Grain growth zone

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Grain growth zone*

5) Which one of the following is a solid state joining process? **1 point**

- Gas tungsten arc welding
- Resistance spot welding
- Friction welding
- Submerged arc welding

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Friction welding*

6) The filler material used for Soldering is **1 point**

- Al-Cu alloy
- Pb-Sn alloy
- Si-Ti alloy
- Cu-Ag alloy

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Pb-Sn alloy*

7) The process of reheating the martensitic steel to reduce its brittleness without any significant loss in its hardness is **1 point**

- Normalizing
- Annealing
- Quenching
- Tempering

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Tempering*

8) Which of the following statement is/are correct for Heterogeneous joining process? **1 point**

- (i) A filler material different from the parent material is used
- (ii) Soldering and Brazing are falls under the category of Heterogeneous

joining process

- Only i  
 Only ii  
 Both i and ii  
 None of these

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Both i and ii*

9) Two 1 mm thick steel sheets are to be spot welded at a current of 5000A. Assuming effective resistance to be 200 micro-ohms and current flow time of 0.2 second, heat generated during the process will be **1 point**

- 0.2 Joule  
 1 Joule  
 5 Joule  
 1000 Joule

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*1000 Joule*

10) Choose the most appropriate set of heat treatment process and the corresponding process characteristics **1 point**

Process	Characteristics
(A) Tempering	(i) Austenite is converted into bainite
(B) Austempering	(ii) Austenite is converted into martensite
(C) Martempering	(iii) Both hardness and brittleness are reduced

- A-iii, B-i, C-ii  
 A-iii, B-ii, C-i  
 A-ii, B-iii, C-i  
 A-i, B-ii, C-iii

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*A-iii, B-i, C-ii*

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