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## Unit 6 - Week 5

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### Course outline

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- Weldability of High Strength Low Alloy Steels
- Weldability of Q&T Steels- I
- Weldability of Q&T Steels- II
- Weldability of Q&T Steels- III
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- Quiz : Assignment 5
- Solution for Assignment No. 5

Week 6

## Assignment 5

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-04-03, 23:59 IST.**

1) Typical microstructure of HSLA steel consists of **1 point**

- Coarse ferrite and pearlite
- Fully austenitic structure
- Fine ferrite, pearlite, bainite/martensite
- Ferrite and austenite

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Fine ferrite, pearlite, bainite/martensite*

2) With increase in thickness of HSLA plates, the minimum pre-heat temperature should **1 point**

- Increase
- Decrease
- First increase then decrease
- Remains constant

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Increase*

3) Steels in Q and T conditions typically have **1 point**

- Bainitic & ferritic microstructure
- Bainitic & austenitic microstructure
- Bainitic & martensitic microstructure
- Ferritic & austenitic microstructure

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Interaction  
Session

- Increase yield strength
- Increase notch toughness
- Reduction in yield strength
- Increase in ultimate tensile strength

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Reduction in yield strength*

5) Jominy quench test can be used to

1 point

- Determine hardenability
- Estimate extent of hardness variation in weldements
- Determine impact toughness
- Both a and b

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Both a and b*

6) With increase in tempering temperature, in case of Q&T steel welded joints, the hardness

1 point

- Decreases continuously
- Increases continuously
- Decreases up to a certain temperature then increases due to carbide formation and then decreases again
- Increases up to a certain temperature then decreases due to carbide formation and then increases again

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Decreases up to a certain temperature then increases due to carbide formation and then decreases aga*

7) The most favourable microstructure in welding of Q&T steels is

1 point

- Ferrite
- Ferrite + upper Bainite
- Untempered Martensite
- Ferrite+Lower Bainite+Tempered martensite

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Ferrite+Lower Bainite+Tempered martensite*

8) Use of electron beam welding on Q&T steels is limited to 0.5 inch thick plates due to

1 point

- Embrittlement
- Martensitic transformation in HAZ
- Martensitic transformation in weld zone
- All of above

No, the answer is incorrect.

**Score: 0**

**Accepted Answers:**

*All of above*

9) The important process parameters for air plasma cutting process are

**1 point**

- Current, air pressure and welding speed
- Current, voltage and welding speed
- Current, electrical resistance and welding speed
- All of above



**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Current, air pressure and welding speed*

10) Gas cutting is not used for Q&T steels due to

**1 point**

- Low heat input
- High cooling rate
- Deterioration of mechanical properties such as yield strength and notch toughness
- All of above



**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Deterioration of mechanical properties such as yield strength and notch toughness*

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