



Welding

Flexible Instruction Day

Assignment #3

Chapter 1: SMAW Techniques Anticipation Guide

Learning Standard	Standard CC.3.5.9-10.A. Cite specific textual evidence, etc....
Task # & Description	Review the information and complete the activity Follow written instructions to complete work assignments and rules.

CONTACT INFORMATION/ASSISTANCE

Instructor Name: George Petronelis, Jacob Hughes

We will be available by email 7:40-12, and 12:30-3:10 to answer your questions. Please reach out if you are having difficulty completing your assignments.

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INSTRUCTIONS

- All work is due on the day we return to school. This is counted towards your attendance **and** as a classroom assignment.
- Read the information
- Complete the attached assignment

Name: _____

Session: _____

_____/____ points

SMAW Techniques Anticipation Guide



Name: _____ Date: _____

Directions: In the first column, indicate whether you agree or disagree with each statement in the center column. Following the lesson, you will decide whether you still hold the same opinion.

Before the Lesson:		Statement	After the Lesson:	
Agree	Disagree	1. The whip and pause technique is most often used with the E7018 electrode.	Agree	Disagree
Agree	Disagree	2. Stringer beads can be used in any position with any electrode.	Agree	Disagree
Agree	Disagree	3. An <i>edge joint</i> is now referred to as a <i>parallel joint</i> .	Agree	Disagree
Agree	Disagree	4. The whipping technique is done most commonly with a low-hydrogen electrode.	Agree	Disagree
Agree	Disagree	5. Controlling travel speed is essential to ensure good penetration and fusion and avoid potential metallurgical effects in the heat-affected zone.	Agree	Disagree
Agree	Disagree	6. Multi-pass welds can use multiple electrodes and different weave patterns for each.	Agree	Disagree

Types of Weave Techniques



Name: _____ Date: _____

Directions: Review this information as directed by your instructor. Keep this handout for future reference.

NAME	APPLICATION	PATTERN	POSITION
Crescent Moon Weave	• Buildup • Hardfacing		• Flat Plate
Circle Weave	• Buildup • Hardfacing		• Flat Plate
Figure 8 Weave (Lace)	• Cap on Pipe/Plate in 2G Horizontal		• Pipe 2G Cap
Z Weave	• Lap • Fillet		• 2F Plate • 4F Plate
Straight Weave—Side to Side Motion	• Buildup • Hardfacing		• Flat Plate

Directions: Choose the letter of the best answer.

- ### Multiple Choice

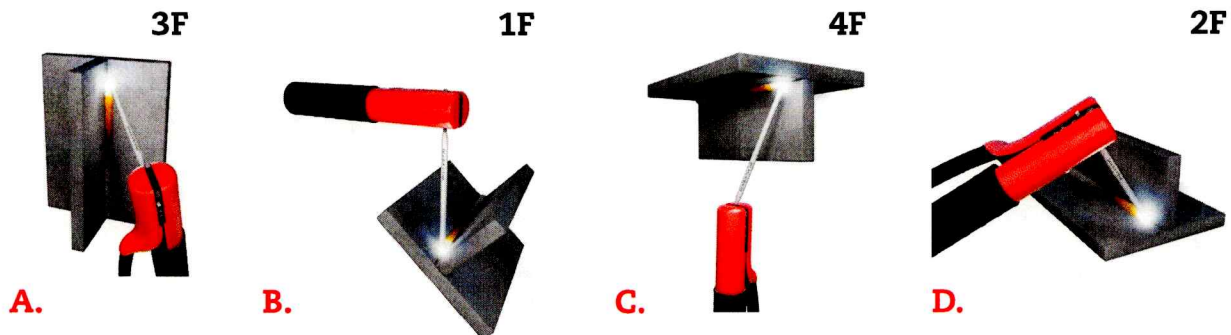
Directions: Choose the letter of the best answer.

8. If the amperage setting is too low, it will be difficult to _____.
 - A. Strike an arc
 - B. Maintain correct arc length
 - C. Prevent overlap
 - D. All of these
9. Multiple-pass welds are the least difficult to perform in the ____ position.
 - A. 1F
 - B. 2F
 - C. 3F
 - D. 4F

10. Travel speed that is too slow will increase the _____.
A. Heat input
B. HAZ
C. Bead width
D. All of these
11. The whip and pause technique is most often used with which of the following electrodes?
A. E7018
B. E6013
C. E6010
D. E7024
12. Which bead type is rarely used in the horizontal position due to the effect of gravity on the weld pool?
A. Weave
B. Lap
C. Stringer
D. Butt
13. What bead can be used with upward progression?
A. Stringer
B. Weave
C. Only stringer
D. Only weave
E. Both stringer and weave
14. A quality stringer bead has good wash-in at the weld _____.
A. Face
B. Angle
C. Zone
D. Toes
15. The whipping technique is used with the _____ electrode type.
A. Fast freeze
B. Fast fill
C. Fill freeze
D. None of these
16. Backing bars are sometimes used at the joint root of a CJP V-groove weld to _____.
A. Reduce the occurrence of overlap in the weld joint
B. Support the molten metal when depositing the root pass
C. Add additional alloying properties to the molten material
D. Reduce the heat-affected zone
17. If excessive arc length is being used, there is potential for increased _____.
A. Porosity
B. Spatter
C. Undercutting
D. All of these
18. If the weld bead appearance is narrow and ropy, the cause is most likely _____.
A. Arc length is too short
B. Amperage is too high
C. Travel speed is too fast
D. Amperage is too low

19. Excessive welding amperage can cause ____.
- A. Larger heat-affected zone
 - B. Potential undercut
 - C. Flat bead profile
 - D. Excessive spatter
 - E. All of these
20. Individual workpieces of a joint are called ____.
- A. Members
 - B. Laps
 - C. Butts
 - D. Roots
21. The most commonly used travel angle for SMAW is when the electrode is pointing in a direction opposite to the progression of welding.
- A. Neutral angle
 - B. Drag angle
 - C. Work angle
 - D. Groove angle

Directions: Use the images to identify the following fillet weld positions.



22. Which of the images represents a flat fillet weld? _____
23. Which of the images represents a horizontal fillet weld? _____
24. Which of the images represents a vertical fillet weld? _____
25. Which of the images represents an overhead fillet weld? _____