

Name _____

Date _____ Hour _____

14

Arc Welding and Oxyfuel Cutting

Multiple Choice

Choose the answer that best completes each statement or question.

- _____ 1. Which type of welding is also known as stick welding and has the welder use an electrode?
- A. metal inert gas welding
 - B. stringer metal arc welding
 - C. tungsten inert gas welding
 - D. shielded metal arc welding
- _____ 2. Which type of shielded metal arc welding machine is a simple transformer that plugs into normal 220V wiring?
- A. DC (direct current) machine
 - B. simple electrode welding machine
 - C. AC (alternating current) machine
 - D. simple household welding machine
- _____ 3. Which type of shielded metal arc welding machine acts as an electrical generator?
- A. DC (direct current) machine
 - B. stringer metal arc welding machine
 - C. AC (alternating current) machine
 - D. metal inert gas welding machine
- _____ 4. Which type of welding uses a combination of electricity and an inert shielding gas?
- A. metal inert gas welding
 - B. AC shielded metal arc gas welding
 - C. DC shielded metal arc gas welding
 - D. AC/DC shielded metal arc gas welding
- _____ 5. Which type of welding is used in situations where high quality results are essential?
- A. metal inert gas welding
 - B. stringer metal arc welding
 - C. tungsten inert gas welding
 - D. shielded metal arc welding

- _____ 6. What code means that the electrode is usable in any welding position?
- A. "1"
 - B. "3"
 - C. "2"
 - D. "4"
- _____ 7. The electrode should be kept at about a _____.
- A. 5- to 20-degree angle from perpendicular in the direction of travel
 - B. 15- to 30-degree angle from perpendicular in the direction of travel
 - C. 20- to 45-degree angle from perpendicular in the direction of travel
 - D. 45- to 60-degree angle from perpendicular in the direction of travel
- _____ 8. Oxygen cylinders are usually _____.
- A. red
 - B. black
 - C. blue
 - D. green
- _____ 9. Acetylene cylinders are usually _____.
- A. red
 - B. black
 - C. blue
 - D. green
- _____ 10. What part of cutting equipment is color coded red or black and supplies gas from the cylinder to the torch?
- A. oxygen hose
 - B. acetylene hose
 - C. torch head
 - D. oxygen tube
- _____ 11. What part of cutting equipment is attached to the cylinder outlet to control gas pressure to the torch?
- A. torch head
 - B. oxygen check valve
 - C. oxygen regulator
 - D. oxygen cylinder valve

- _____ 12. The oxygen hose is color coded _____.
- A. red
 - B. black
 - C. blue
 - D. green
- _____ 13. Goggles used for oxyfuel cutting must have a _____.
- A. No. 1 or darker-shaded lens
 - B. No. 3 or darker-shaded lens
 - C. No. 2 or darker-shaded lens
 - D. No. 4 or darker-shaded lens
- _____ 14. What type of fuel gas is often used on farms and in rural areas since it is easily accessible and less expensive than other fuels?
- A. propane
 - B. natural gas
 - C. MAPP® gas
 - D. acetylene
- _____ 15. What type of fuel gas is the most versatile for gas welding operations?
- A. propane
 - B. natural gas
 - C. MAPP® gas
 - D. acetylene
- _____ 16. What type of fuel gas is used mostly in industry?
- A. propane
 - B. natural gas
 - C. MAPP® gas
 - D. acetylene
- _____ 17. In the oxyfuel cutting process, the temperature of the metal must be between _____.
- A. 800° F and 1000° F to burn
 - B. 1200° F and 1600° F to burn
 - C. 1000° F and 1200° F to burn
 - D. 1600° F and 1800° F to burn

- _____ 18. The correct type of flame for heating, cutting, and welding with oxyfuel equipment is called a(n) ____.
- A. neutral flame
 - B. carburizing flame
 - C. oxidizing flame
 - D. median flame
- _____ 19. What type of flame for heating, cutting, and welding with oxyfuel equipment has excess oxygen in the mixture and is hotter than other flames?
- A. neutral flame
 - B. carburizing flame
 - C. oxidizing flame
 - D. median flame
- _____ 20. What type of flame for heating, cutting, and welding with oxyfuel equipment has excess gas in the mixture and is cooler than other flames?
- A. neutral flame
 - B. carburizing flame
 - C. oxidizing flame
 - D. median flame

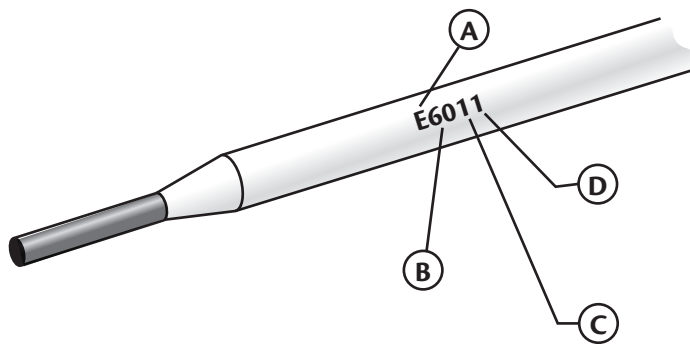
True/False

- _____ 21. AC (alternating current) shielded metal arc welding machines are relatively expensive and suited for special purposes.
- _____ 22. Shielded metal arc welding machines do not allow the user to set the amperage level.
- _____ 23. The amount of time that a welder can be used before it must be allowed to cool down is called the duty cycle.
- _____ 24. The simplest type of bead is called a stringer bead.
- _____ 25. The acetylene cylinder valve can be opened fully at all times.
- _____ 26. Oxygen is a colorless, odorless, tasteless gas.
- _____ 27. Oxygen is an extremely flammable gas.

- _____ 28. When using oxyfuel equipment, backfire is a condition in which the torch flame momentarily burns back into the tip.
- _____ 29. When using oxyfuel equipment, flashback occurs when the flame burns back into the torch body.
- _____ 30. When using oxyfuel equipment, flashback is characterized by a loud snap or pop.
- _____ 31. When cutting steel, a cut made with too much cutting oxygen pressure will leave a top edge uneven or dished.
- _____ 32. When cutting steel, a cut made with too much preheat will result in the top edge of the cut being flared.
- _____ 33. When cutting steel, a quality cut has clean and square edges on the top and bottom and the surface of the cut is smooth with uniform vertical drag lines that bend back slightly at the bottom.
- _____ 34. If flashback occurs when using oxyfuel equipment, it will generally correct without any action from the operator.

Matching

Identify electrode code markings by matching it with its number.



- _____ 35. welding position
- _____ 36. indication it is for electric arc welding
- _____ 37. special characteristics
- _____ 38. tensile strength

Matching

Match each term with its definition.

- A. flux
- B. slag
- C. electrode
- D. electrode holder
- E. ground clamp

_____ 39. metal welding rod

_____ 40. a device that grips the electrode

_____ 41. provides a gas shield for the molten pool during the welding process

_____ 42. a device attached by a cable to the arc welder

_____ 43. layer created by impurities that float to the top of the weld

Matching

Match each piece of oxyfuel cutting equipment with its definition.

- A. coupling nut
- B. cutting head
- C. mixing chamber
- D. oxygen cutting lever
- E. oxygen preheat valve

_____ 44. depressing this allows oxygen to travel through the oxygen tube

_____ 45. controls the supply of oxygen from the supply hose

_____ 46. designed to accept different types of cutting tips

_____ 47. oxygen and fuel gas are mixed within this tube

_____ 48. used to connect the cutting attachment securely to the torch handle

Short Answer

49. What are the two methods of establishing an arc? _____

50. What is oxidation? _____

51. What are the two basic steps in the oxyfuel cutting process? _____
