

Welding IP Red Seal Practice Exam

1. The electrode used for the PAC process is made of
 - a. carbon.
 - b. tungsten.
 - c. plasma.
 - d. titanium.
2. Which factors determine how equipment is set-up for the PAC process?
 - a. duty cycle and travel speed
 - b. type of torch and power source
 - c. depth and width of gouge
 - d. thickness and type of metal
3. The air carbon arc cutting electrode most commonly used for mild steel is
 - a. a DC copper-coated electrode.
 - b. a DC plain electrode.
 - c. a high tensile electrode.
 - d. a flux-coated steel electrode.
4. Carbon deposits left in the groove cut by the AAC process results in
 - a. slag inclusions in the weld
 - b. overlap at the sides of the weld
 - c. brittle welds
 - d. porous welds
5. Excessive slag adhering to the edges of an air carbon arc cut is caused by
 - a. Incorrect polarity.
 - b. an electrode angle that is too low
 - c. a travel speed that is too fast.
 - d. air pressure that is too low.
6. A drawback to cut quality with the PAC process is
 - a. rounded edges on the cut.
 - b. rough cut surfaces.
 - c. excessive slag production.
 - d. a slight bevel on one side of the cut.
7. When using the AAC process, the air is turned on
 - a. after the arc is established.
 - b. before the arc is established.
 - c. after the cut has been started.
 - d. once travel speed is at maximum.
8. The purpose of the air jet in the AAC process is to
 - a. blow molten metal away.
 - b. blow cold air on the heat affected zone.
 - c. cool the electrode.
 - d. blow the graphite clear of the weldment.

9. Which of the following power sources is best suited for the AAC processes?

- a. 300 amp with 60% duty cycle
- b. 300 amp with 100% duty cycle
- c. 400 amp with 60% duty cycle
- d. 400 amp with 100% duty cycle

10. To increase the depth of cut when air carbon arc gouging

- a. increase the angle of electrode
- b. increase the voltage.
- c. increase speed of travel.
- d. decrease the angle of the electrode.

11. A disadvantage of the PAC process compared to the OFC process is

- a. a distortion of the work piece.
- b. a high initial equipment cost.
- c. a low cutting speed.
- d. the use of volatile gases.

12. When using the air carbon arc cutting process, the WCB requires the use of

- a. a face shield.
- b. cutting goggles.
- c. rubber boots.
- d. ear plugs and/or ear muffs.

13. When cutting mild steel, the main advantage of the PAC process over the OFC process is that

- a. cutting speed is increased.
- b. edges are more square.
- c. cut surfaces are smoother.
- d. equipment is cheaper.

14. When using the AAC process, which of the following welding cables is preferred?

- a. #4/0 copper cable
- b. #2/0 copper cable
- c. #3/0 copper cable
- d. #1/0 copper cable

15. Which of the following is an advantage of air carbon arc gouging over oxy-acetylene gouging?

- a. air carbon arc gouging can leave a carbon deposit
- b. air carbon arc gouging has a lower equipment cost
- c. air carbon arc gouging can cut non-ferrous metals
- d. air carbon arc gouging requires a large volume of compressed air

16. What is a common application of the AAC process?

- a. cleaning weld joints by searing
- b. cutting thick mild steel plate
- c. removing weld faults
- d. cutting reactive metals like titanium

17. A ceramic standoff helps to
- hold the base metal in place.
 - maintain the tip-to-work distance.
 - maintain the correct torch angle.
 - produce a square cut.

18. Which polarity is recommended for air carbon arc gouging of mild steel?
- DCEP
 - DCEN
 - CC/CV
 - ACHF

19. The PAC process can be used to cut
- Any material
 - Only non-ferrous metals
 - Only ferrous metals
 - Plasma based metals

20. In plasma arc cutting, how is the slag removed from the kerf?
- no slag is produced since the metal vaporizes
 - compressed air blows it away
 - the plasma jet blows it away
 - compressed nitrogen blows it away

21. The air jets of the air carbon arc torch should be positioned
- between the electrode and the work.
 - between the electrode and the operator.
 - perpendicular to the electrode.
 - in the opposite direction to travel.

22. The most important factor in determining the width of a groove cut with the AAC process is
- torch angle.
 - electrode diameter.
 - electrode stickout.
 - rate of travel.

23. The main advantage of using the AAC process over the OFC process is that AAC
- equipment is noisier.
 - can cut ferrous and nonferrous metals quickly.
 - gives a more square cut.
 - requires no power source.

24. Plasma is created when a gas is
- forced through a small orifice.
 - subjected to great pressures.
 - super heated with an electric arc.
 - expanded quickly.

25. When using the PAC process, double arcing is caused by

- a. a blocked tip orifice.
- b. excessive travel speed.
- c. a power surge.
- d. gas pressure that is too high.

26. The primary function of the secondary gas in the PAC process is to

- a. cool the torch,
- b. increase arc temperature.
- c. cool the workpiece.
- d. blow slag from the kerf.

27. What is the recommended air pressure for the AAC process?

- a. 140 to 280 kPa (20 to 40 psi)
- b. 280 to 400 kPa (40 to 60 psi)
- c. 550 to 690 kPa (80 to 100 psi)
- d. 830 to 1000 kPa (120 to 150 psi)

28. When using DCEP, the recommended current for a 6 mm (1/4") air carbon arc electrode is

- a. 80 to 150 amps.
- b. 150 to 200 amps.
- c. 200 to 400 amps.
- d. 400 to 800 amps.

29. The optimum electrode stickout for the AAC process is

- a. 50 to 100 mm (2 to 4") .
- b. 100 to 150 mm (4 to 6").
- c. 150 to 200 mm (6 to 8") .
- d. 200 to 250 mm (8 to 10").

30. When using the AAC process, the operator is responsible for protecting others from sparks and arc flashes by

- a. placing an object in front of the arc.
- b. placing protective screens around the work area.
- c. air carbon arc cutting with your back to others.
- d. reducing the current and air pressure.

31. The purpose of the copper coating on AAC electrodes is to

- a. reduce arc blow.
- b. reduce the arc temperature.
- c. allow high currents to be used.
- d. make identification easier.

32. What is a disadvantage of the AAC process compared to the OFC process?

- a. the explosion danger is greater
- b. produces a large hardened zone in the base metal
- c. cannot cut stainless steel
- d. requires a large volume of compressed air

33. What advantage do inverter power sources offer for the PAC process?
- a. they do not have to be cooled
 - b. they produce more current
 - c. their small size and weight
 - d. they produce better quality cuts
34. PAC systems are powered by
- a. a high ocv unit.
 - b. an AC power source.
 - c. an ACHF power source.
 - d. an AAC transformer.
35. Which filter lens is recommended for air carbon arc gouging?
- a. shade #14
 - b. shade #12
 - c. shade #10
 - d. shade #8
36. Cutting thick metal with a PAC torch requires
- a. a greater travel speed.
 - b. a high current setting.
 - c. reduced gas pressure.
 - d. a wide torch angle.
37. A gas that has been heated until it ionizes is called
- a. carbon arc.
 - b. argon.
 - c. tungsten.
 - d. plasma.
38. When the slag is not being removed because of insufficient air pressure using the arc-air torch
- a. adjust the electrode angle.
 - b. decrease the cutting speed.
 - c. change the electrode.
 - d. increase the electrode stickout.
39. On some PAC systems, both the plasma gas and the cooling gas is
- a. oxygen.
 - b. compressed air.
 - c. nitrogen.
 - d. an oxygen/nitrogen mixture.

ANSWER KEY

1. B
2. D
3. A
4. C
5. D
6. D
7. B
8. A
9. D
10. A
11. B
12. D
13. A
14. A
15. C
16. C
17. B
18. A
19. A
20. C
21. A
22. B
23. B
24. C
25. A
26. A
27. C
28. C
29. B
30. B
31. C
32. D
33. C
34. A
35. B
36. B
37. D
38. B
39. B