

Welder

Practice Interprovincial Red Seal Exam

Disclaimer: This is NOT an Interprovincial Standards (Red Seal) Examination. This is a practice examination that has been developed using similar weighting, question distribution, question taxonomies and question styles to that of a red seal examination. Success on this examination will NOT result in certification or qualification. This examination is intended to be used for self assessment in preparation for attempting a red seal examination. More information about the standard that the red seal examination is based may be found within the National Occupational Analysis for the occupation at www.red-seal.ca .

Section 1 Occupational Skills

1. _____ What does 3F designate on a welding specification sheet?
 - a. Flat fillet weld position.
 - b. Horizontal fillet weld position.
 - c. Vertical fillet weld position.
 - d. Overhead weld position.

2. _____ With the scale of a drawing at 1:5, what is the length of line on the drawing for a plate length of 150cm (59")?
 - a. 5 cm (2").
 - b. 15 cm (6").
 - c. 30 cm (12").
 - d. 75 cm (30").

3. _____ How many millimeters is equivalent in length to 6 feet – 3 1/2 inches?
(25.4mm = 1")
 - a. 1300mm.
 - b. 1613mm.
 - c. 1918mm.
 - d. 1969mm.

4. _____ Which type of drawing would show all three sides equally and uses horizontal plane lines at 30 degrees?
 - a. Oblique.
 - b. Isometric.
 - c. Perspective.
 - d. Orthographic.

5. _____ Which metal is more likely to crack due to weld joint shrinkage?
 - a. Stainless steel
 - b. Copper
 - c. Cast iron
 - d. Carbon steel

6. _____ What type of material has a grain structure that appears very coarse and silvery?
 - a. Aluminum.
 - b. Stainless steel.
 - c. Grey cast iron.
 - d. White cast iron.

7. _____ What is the best way to determine the composition of a metal so that it can be welded?
 - a. Check the Blue-Print.
 - b. Check the mill test report.
 - c. Ask a co-worker.
 - d. Complete a spark test.

8. _____ Which component of a welding machine changes AC current to DC current?
 - a. Rectifier.
 - b. Resistor.
 - c. Conductor.
 - d. Capacitor.

9. _____ What would the abbreviation RFSO mean on a material list?
 - a. Reinforced fitting socket weld on.
 - b. Raised face slip on.
 - c. Reinforced fitting slide on.
 - d. Roll weld fitting slowly.

10. _____ Which standard refers to welded steel construction using metal arc welding?
 - a. CSA Z662.
 - b. CSA W178.2.
 - c. CSA W59.
 - d. CSA W47.1.

11. _____ When ultraviolet rays from the welding arc come into contact with chlorinated hydrocarbon degreasers, what poisonous gas is created?
 - a. Ethylene dichloride gas.
 - b. Ozone.
 - c. Phosphine gas.
 - d. Phosgene gas.

12. _____ When welding where the general public may be exposed to the rays of the arc, what should the welder do?
- Proper screens and warning signs.
 - Rope off the area.
 - Inform the safety coordinator.
 - Give a verbal warning before starting to weld.
13. _____ What would be the best type of material to use for making a permanent template for pipe?
- Newsprint paper.
 - Heavy cardboard.
 - Fiber gasket.
 - Sheet steel.
14. _____ What tool would you use to scribe large arcs and circles?
- Trammel points.
 - Compass.
 - Divider.
 - Chalk line.
15. _____ What tool would give you the most accurate measurement to determine the wall thickness of pipe?
- Tape measure.
 - Dividers.
 - Calipers.
 - Trammel points.
16. _____ Which fuel gas would provide the greatest amount of heat energy for pre-heating?
- Propane.
 - Propylene.
 - Natural Gas.
 - Acetylene.
17. _____ What would excessive drag lines indicate when oxy-fuel cutting?
- The cutting tip size is too large.
 - The oxygen pressure is too high.
 - Travel speed is too slow.
 - Travel speed is too fast.
18. _____ Which disc would be selected when using a 5" grinder that has a 10,000 r.p.m. rating and grinding on the flat side of the disc?
- Disc thickness $\frac{3}{32}$ ", rated at 12,200 r.p.m.
 - Disc thickness $\frac{1}{4}$ ", rated at 8600 r.p.m.
 - Disc thickness $\frac{1}{16}$ ", rated at 10 000 r.p.m.
 - Disc thickness $\frac{1}{4}$ ", rated at 12 200 r.p.m.

19. _____ Which drawing shows all dimensions and the completed object?
- Detail.
 - Working.
 - Assembly.
 - Reference.
20. _____ What would be the radius of a 6" (15cm) long radius 90 degree elbow?
- 6 inches (15cm).
 - 9 inches (23cm).
 - 12 inches (30cm).
 - 15 inches (38cm).
21. _____ A cylindrical tank with a 12 foot (365.75cm) O.D. is to have a nozzle installed at 45 degrees around the circumference. From the 0° reference point what would be the linear measurement to locate the nozzle? (Answer to the nearest 16th (0.15 cm) of an inch.)
- | Imperial | Metric |
|-----------------|---------------|
| a. 4'-1/8" | a. 122.237 cm |
| b. 4'-8 9/16" | b. 143.667 cm |
| c. 6'-9 7/16" | c. 206.849 cm |
| d. 14'-1 10/16" | d. 430.847 cm |
22. _____ What direction does metal expand when pre-heated without being restrained?
- Volumetrically (in all directions).
 - Longitudinally (lengthwise).
 - Transversely (across its width).
 - Only upwards and downwards.
23. _____ When fitting and assembling, how long should tack welds normally be?
- One half the thickness of the base metal.
 - Same length as the thickness of the base metal.
 - Twice the length as the thickness of base metal.
 - Always make your tacks as long as possible.
24. _____ When preparing test coupons for an ASME section IX welder qualification, what is the maximum that the edges of each coupon may be radiused?
- 3/32" (2.5mm).
 - 1/32" (0.8mm).
 - 1/16" (1.6mm).
 - 1/8" (3.2mm).

25. _____ How would you check for leaks on oxy-fuel equipment?
- With a flame from a lighter.
 - With a leak detection fluid.
 - By increasing the pressure to hear it.
 - By using anti-leak solution.
26. _____ What is the rigging signal used to lift a load vertically?
- Thumb pointed upwards with a circular turning motion.
 - Right arm extended vertically with a circular turning motion.
 - Thumb pointed upwards with an up and down jerking motion.
 - Finger pointed upwards with a circular turning motion.
27. _____ What is the maximum number of plates that can be lifted using a plate clamp with a locking grip?
- One.
 - Two.
 - Three.
 - As many as will fit between the jaws.

Section 2 Quality Control

28. _____ Who is responsible for the administration and certification to CSA W 47.1?
- Minister of Labor.
 - Any Building Department.
 - Any company who is certified.
 - Canadian Welding Bureau.
29. _____ What code or standard covers the construction of pressure vessels?
- CSA W59.
 - CSA W47.2.
 - ASME Section VIII.
 - CSA Z662.
30. _____ What is the main reason for using pre-heat on heavy sections prior to welding?
- To reduce the current setting.
 - To eliminate the need for cleaning.
 - To reduce the quenching effect and remove hydrogen.
 - To aid in the formation of the weld bead.
31. _____ Annealing is a heat treatment process which leaves the material in what state?
- Softest, toughest, weakest state.
 - Hardest, toughest, strongest state.
 - Softest, toughest, strongest state.
 - Hardest, weakest, toughest state.

32. _____ What is the controlled heating (1100 to 1150° F) (539 to 621° C) of a welded steel fabrication, then slow controlled cooling process?
- Annealing
 - Normalizing
 - Tempering
 - Stress relieving
33. _____ In ASME what is used to identify weld metal chemical composition?
- A – numbers.
 - B – numbers.
 - F – numbers.
 - P – numbers.
34. _____ What is the most precise method of identifying properties of a metal?
- By performing a series of identification tests.
 - By performing a chemical analysis on a piece of scrap.
 - By visual identification of color coding.
 - By reviewing the appropriate Mill Test Report.
35. _____ What would be the approximate temperature range of a rod oven for proper storage of low hydrogen electrodes?
- 30°C – 140°C (85°F – 250°F) above the ambient temperature.
 - 30°C – 140°C (85°F – 250°F) below the ambient temperature.
 - 260°C – 427°C (500°F – 800°F) above the ambient temperature.
 - 260°C – 427°C (500°F – 800°F) for one to two hours.
36. _____ Using the CSA classification system in the E492T – 6CH, what does the 2 denote?
- Tensile strength of weld metal.
 - Welding limited to the flat and horizontal position.
 - Chemical composition of weld metal.
 - Type of shielding gas required.
37. _____ What is the most common type of non-destructive testing?
- Hydrostatic.
 - Magnetic particle.
 - Ultrasonic.
 - Visual inspection.
38. _____ When performing a tensile test, what occurs between the yield point and the ultimate tensile strength?
- Fracture.
 - Solid deformation.
 - Maximum ductility is reached.
 - Elastic/plastic range is reached.

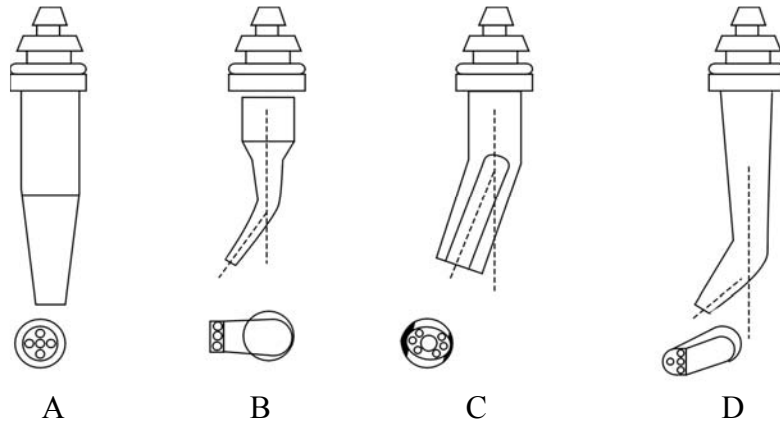
39. _____ What is the most accurate tool used to measure the leg length of a fillet weld?
- A carpenter square.
 - A fillet weld gauge.
 - A tape measure.
 - A combination square.
40. _____ How is the size of a fillet weld measured?
- By the length of the longest leg.
 - By the length of the shortest leg.
 - By the length of the effective throat.
 - By the length of the shortest leg plus penetration.
41. _____ Where would you most likely find the acceptable amount of angular distortion allowable tolerance?
- Bill of materials.
 - Revisions list.
 - Table of dimensions.
 - Notes and specifications.

Section 3 Cutting Processes

42. _____ Which tool would be the best choice for cutting 22 gauge steel roof decking?
- Oxy-fuel torch.
 - Cut-off saw.
 - Grinder.
 - Tin snips.
43. _____ What determines the material thickness when punching holes with an ironworker?
- Only punch material thinner than $\frac{1}{2}$ the punch diameter.
 - Only punch material thinner than $\frac{3}{4}$ the punch diameter.
 - Only punch material thickness larger than the punch diameter.
 - Only punch material thicknesses equal to or less than the punch diameter.
44. _____ According to OH&S regulations, what is the minimum number of degrees that the guard must cover the grinding disc?
- 90°.
 - 105°.
 - 120°.
 - 135°.

45. _____ What is done to restore a grinding wheel that has become glazed or loaded with foreign particles?
- Truing.
 - Squaring.
 - Blotting.
 - Dressing.
46. _____ What is the most common ratio of soluble oil to water used for coolant/lubricant on a horizontal band saw?
- 1:25.
 - 25:1.
 - 1:10.
 - 10:1.
47. _____ What tip size should be used to cut sheet metal?
- #0
 - #1
 - #2
 - #6
48. _____ Why should oxy-acetylene welding or cutting never be done with the acetylene cylinder lying down?
- Acetylene will not flow through freely.
 - Oxygen and acetylene will not mix evenly.
 - Acetylene will be trapped in the regulator.
 - Acetone will flow from the acetylene cylinder.
49. _____ What fuel gas would be the best choice for pre-heating 6" (150mm) or thicker material?
- Acetylene.
 - Mapp gas.
 - Natural gas.
 - Propane.
50. _____ What is used to determine the amount of heat released by a welding tip?
- Distance from the work.
 - The amount of oxygen pressure.
 - The amount of acetylene pressure.
 - The size of tip orifice.

51. _____ Referring to the diagram below which cutting tip is used for removal of rivets and bolts?



- a. A.
- b. B.
- c. C.
- d. D.

52. _____ When using the oxy-fuel cutting process, what is required when cutting thinner materials?

- a. Less torch inclination.
- b. Slower travel speed.
- c. More torch inclination.
- d. Higher gas volume.

53. _____ What is the explosive mixture range of acetylene gas in air?

- a. 2.5% - 80%.
- b. 3.5% - 95%.
- c. 3.0% - 93%.
- d. 2.0% - 98%.

54. _____ Which of the following is a working part of a regulator?

- a. Mixing chamber.
- b. Diaphragm.
- c. Diffuser.
- d. Gauge glass.

55. _____ What would offer the least protection from hot sparks and slag when cutting with an oxy-fuel torch?

- a. Leather.
- b. Wool.
- c. Polyester.
- d. Cotton.

56. _____ What characteristics would represent a flashback?
- Welding tip continuously overheats.
 - Black smoke and red sparks are emitted from the tip.
 - An acetylene hose has ignited and is burning.
 - Flame constantly extinguishes and re-ignites.
57. _____ What is the temperature range produced within the plasma arc stream?
- 1000°F – 5500°F (538 - 3038°C).
 - 7000°F – 17,500°F (3870 – 9700°C).
 - 18,000°F – 50,000°F (10,000 – 27,760°C).
 - 50,000°F – 75,000°F (27,760 – 41,650°C).
58. _____ What two types of shielding gases are used with a plasma dual flow PAC torch system?
- Helium and Argon.
 - Carbon Dioxide and Nitrogen.
 - Oxygen and Acetylene.
 - Ozone and Benzene.
59. _____ What dictates travel speed when using PAC equipment?
- Condition of the constricting nozzle.
 - Skill of the operator.
 - Condition of the electrode.
 - Type and thickness of the material.
60. _____ What is the best method to control arc radiation, vapors and fumes while using PAC?
- Operate PAC systems outdoors only.
 - Use smaller diameter electrodes and nozzles.
 - Enclose the operating areas completely and add local exhaust fans.
 - Use a water table and complete the cut under water.

61. _____ What are two methods of starting the arc when cutting with the PAC?
- Push and across start.
 - Edge and pierce start.
 - Still and traveling start.
 - Chisel and nick start.
62. _____ What are the equipment requirements required for CAC-A?
- Welding power source, wire feeder, carbon electrodes and shielding gas.
 - Source of compressed air, carbon electrodes, electrode holders and welding power source.
 - Granular flux, power generator, electrode holder and copper coated electrodes.
 - Copper coated electrodes, welding power source, compressed oxygen and electrode holder.
63. _____ When using the CAC-A process, what is the result of inadequate air pressure?
- Sputtering arc.
 - Sticking electrode.
 - Carbon deposits in the base metal.
 - Excessive electrode melt off rate.
64. _____ Which electrode can be used for shielded metal arc cutting (electric arc cutting)?
- E 6010 (E4310).
 - E 7018 (E4918).
 - E 7024 (E4924).
 - E 8018 (E5518).

Section 4 Gouging Processes

65. _____ Which one of the following power source and polarity combinations is used for manual medium to light duty CAC-A gouging operations?
- DC, CV power source set up using DCRP provided it has sufficient output amperage and duty cycle rating.
 - AC/DC, CC/CV power source set up on CV using DCRP provided it has sufficient amperage output and duty cycle rating.
 - AC/DC, CC power source set up using DCRP, provided it has sufficient amperage output and 100% duty cycle.
 - An AC/CV power source provided it has sufficient output amperage and at least a 60% duty cycle rating.

66. _____ What is the main purpose of the copper coating found on CAC-A electrodes?
- To improve arc stability through a wider range of amperage settings.
 - To add to the resistance of the electrode.
 - To reduce the vaporization rate of the electrode.
 - To add extra arc force and penetration characteristics to the electrode.
67. _____ What are the three main types of CAC-A electrodes?
- AC, DC and plain electrodes.
 - DC plain, DC copper coated and AC copper coated electrodes.
 - Graphite based, copper based and carbon based.
 - AC/DC plain, DC copper coated and AC/DC graphite based electrodes.
68. _____ Which of the following set of parameters provides the best selection for air pressure and amperage settings for use with ^{1/4} (6.4mm) diameter CAC-A electrodes?
- 90-150 amps @ 35-80 psi (241 – 551 KPa) air pressure.
 - 200-400 amps @ 80-100 psi (551 – 689 KPa) air pressure.
 - 225-500 amps @ 100-120 psi (689 – 827 KPa) air pressure.
 - 600+ amps @ 100-140 psi (689 – 965 KPa) air pressure.
69. _____ What could be done to achieve more than 1000 amps where required automatic and semi-automatic CAC-A gouging operations?
- A machine capable of the desired output and duty cycle must be obtained.
 - The work piece may be submerged underwater using a special water table to optimize current flow and conductivity, resulting in more work with less amperage.
 - Two or more standard welding machines may be connected in parallel to obtain the needed amperage output.
 - Standard welding machinery can have the factory preset amperage output capacity altered by a qualified electrician to provide the required amperage.
70. _____ What is the maximum electrode extension when performing manual CAC-A gouging operations on carbon steel base materials?
- 8” electrode extension.
 - 7” electrode extension.
 - 6” electrode extension.
 - 4” electrode extension.

71. _____ Which one of the following is the most likely cause of excessive carbon build up on the base metal when performing gouging operations using manual CAC-A on mild steel?
- Travel speed too slow.
 - Improper air jet position or flow, travel speed too fast.
 - Wrong polarity or electrode.
 - Too much air pressure and or amperage.
72. _____ Which of the following problems is most likely caused from inadequate air supply in CAC-A system?
- Loss of arc continuity resulting in controllability issues.
 - Excessive electrode consumption.
 - Hydrogen induced cracking in the base metal.
 - Excessive carbon deposits and contaminated base metal.
73. _____ How much open circuit voltage is present for use with the PAC gouging process?
- 15-35 volts.
 - 35-120 volts.
 - 120-400 volts.
 - 400-500 volts.
74. _____ What type of PAC torch is most commonly used in industry?
- Dual gas flow PAC torches.
 - Water injection PAC torches.
 - Water table PAC torches.
 - Air gas PAC torches.
75. _____ What current and polarity is used in plasma Arc cutting and gouging operations?
- DCRP.
 - AC.
 - DCSP.
 - DCCV.

76. _____ What is done to a PAC cutting torch to make it suitable for gouging operations?
- No changes are made to the PAC torch set up, operator technique is the only change needed.
 - Higher than normal air pressure and voltage settings are employed for optimum results.
 - A water cooling system may be added to avoid heat damage to the torch body as associated with excessive heat radiations from the PAC gouging process.
 - The torch is changed to use a nozzle that reduces arc constriction resulting in lower arc stream velocity.
77. _____ How may noise, fume and radiation levels be reduced when using the PAC process for gouging or cutting operations?
- Clean the material thoroughly with a degreasing solution, wear proper eye and hearing protection.
 - Follow the manufacturers' recommendations regarding suggested power settings and travel speeds.
 - Cutting and gouging may be done underwater on a specially designed water table.
 - Do not use excessive amperage settings.

Section 5 Welding Processes

78. _____ How many different types of welding tips are there for oxy-fuel welding/brazing?
- One.
 - Two.
 - Three.
 - Four.
79. _____ What is the function of flux when using OAW?
- Dissolve or dislodge existing oxides and float them to the surface of the weld bead.
 - Exclude oxygen and nitrogen from the weld until it cools to the point that oxides and nitrides no longer form.
 - Shapes the weld bead.
 - Slows the rate of cooling.
80. _____ A dark, hazy leading edge on the puddle along with a bubbling action in the puddle is characteristics of what type of oxy-fuel flame?
- Neutral flame.
 - Oxidizing flame.
 - Carbonizing flame.
 - These characteristics are not associated with oxy-fuel welding.

81. _____ Which type of welding machine will have a significant energy savings?
- AC Transformer.
 - Transformer Rectifier.
 - AC Generator.
 - Inverter.
82. _____ Using a Transformer Rectifier with 400 amps maximum output and 90% duty cycle, what is the maximum amperage that can be used for welding continually?
- 250 amps.
 - 300 amps.
 - 360 amps.
 - 380 amps.
83. _____ What size of whip would be used if the cable from the welding machine is a #1?
- 3/0.
 - 2/0.
 - 1/0.
 - 3.
84. _____ Which of the following would indicate characteristics for a group of electrodes under ASME?
- F4.
 - 4F.
 - P4.
 - A4.
85. _____ With an E7024 (E4924) electrode, what number indicates welding position?
- 0.
 - 2.
 - 4.
 - 7.
86. _____ Which electrode would you use to increase productivity?
- E6010 (E4310).
 - E7014 (E4914).
 - E7018 (E4918).
 - E7024 (E4924).

87. _____ What is the recommended amperage range for an E7018, $\frac{3}{32}$ " (E4918, 2.5mm) electrode?
- 50-65 amps.
 - 70-100 amps.
 - 105-125 amps.
 - 130-150 amps.
88. _____ Which of the following are characteristics of a short arc length?
- Increased voltage, decreased amperage and decreased weld deposit.
 - Decreased voltage, increased amperage and increased weld deposit.
 - Increased voltage, decreased amperage and increased weld deposit.
 - Decreased voltage, increased amperage and decreased weld deposit.
89. _____ Which electrode can be used as a polarity checking electrode?
- E7010 (E4910).
 - E7014 (E4914).
 - E7018 (E4918).
 - E7024 (E4924).
90. _____ For most applications, what is the correct width of a weave bead?
- $1\frac{1}{2}$ times the bare electrode diameter.
 - 2-3 times the bare electrode diameter.
 - $3\frac{1}{2}$ -4 times the bare electrode diameter.
 - $4\frac{1}{2}$ -5 times the bare electrode diameter.
91. _____ What is the cause of a narrow, high bead while SMAW?
- Too long an arc length.
 - Too short an arc length.
 - Excessive current.
 - Excessive travel speed.
92. _____ What will changing the electrode inclination do to the weld bead?
- Cause the ripples to form unevenly.
 - Cause the weld to build up at the edges.
 - Have an effect on the depth of penetration.
 - Have no effect on the weld.
93. _____ What is the most commonly used drive roll profile for FCAW?
- U-groove drive roll system.
 - V-groove drive roll system.
 - Angled drive roll system.
 - Knurled drive roll system.

94. _____ Why would you inspect your contact tip frequently?
- To be sure the tip has not melted due to increased heat output.
 - To check for wear or blockage that may cause poor electrical contact and an erratic arc.
 - To see if it has enough mig dip coating the tip.
 - To be sure it is still tight to the diffuser.
95. _____ What type of liner is used for the FCAW process?
- Plastic.
 - Teflon.
 - Nylon.
 - Stainless steel.
96. _____ What are the four types of FCAW electrodes?
- Cellulose core, basic core, iron powder core & self shielded.
 - Rutile core, basic core, metal core and self shielded.
 - Cellulose core, basic core, metal core and self shielded.
 - Cellulose core, rutile core, low hydrogen core and iron powder core.
97. _____ In the AWS electrode specification E-70T-3, what welding position is indicated?
- All positions.
 - Flat and horizontal positions.
 - Vertical position.
 - Position is not specified.
98. _____ What will increasing amperage produce while FCAW?
- Narrow, higher bead with less metal flow and deeper penetration.
 - Narrow, higher bead with more metal flow and deeper penetration.
 - Wider, flatter bead with less metal flow and deeper penetration.
 - Wider, flatter bead with more metal flow and deeper penetration.
99. _____ What would the duty cycle of the power source be when using the FCAW process in the fully automatic mode?
- 65%
 - 75%
 - 80%
 - 100%
100. _____ Which type of GMAW wire drive system has the maximum cable length of 15 feet (4 572mm)?
- Push type.
 - Pull type.
 - Push/pull type.
 - Pull/pull type.

101. ____ When welding mild steel with the GMAW process, what shielding gas gives you the deepest penetration?
- Argon.
 - Helium.
 - Argon/CO₂ mixture.
 - CO₂.
102. ____ What is used to determine the type of filler wire used for FCAW?
- The type of base metal.
 - The type of power source.
 - The size of gun.
 - The thickness of the base metal.
103. ____ Which metal transfer with GMAW produces the least amount of spatter?
- Short circuiting transfer.
 - Globular transfer.
 - Spray transfer.
 - Transition transfer.
104. ____ What range of amperage is best suited to achieve spray transfer with .035” (.889mm) diameter wire?
- 100-125 amps.
 - 130-160 amps.
 - 180-230 amps.
 - 250-300 amps.
105. ____ What is the first step when changing out an empty spool of wire?
- Remove nozzle and contact tip.
 - Pull wire out of liner.
 - Remove the empty spool.
 - Turn off power source and wire feeder.
106. ____ Who should install your brand new GMAW machine?
- The supplier.
 - The supervisor.
 - A qualified electrician
 - The employer.
107. ____ If the wire is feeding erratically, what is the most likely problem?
- Dirty tip.
 - Too much tension on drive roll.
 - Dirty liner.
 - Worn out drive rolls.

108. ____ What is the most common cause of undercut on the cap pass of a 3F weld?
- Travel speed too slow.
 - Amperage too high.
 - Wire stick out too long.
 - Contact tip to work distance is excessive.
109. ____ Which welding process is used to produce high quality welds on critical weldments?
- SMAW.
 - GMAW.
 - FCAW.
 - GTAW.
110. ____ When using the GTAW process what shielding gas gives deeper penetration, faster welding speeds and a narrow heat affected zone?
- Argon.
 - Helium.
 - Hydrogen.
 - Argon/CO₂ mixture.
111. ____ What is the color band of EWTh-1?
- Green.
 - Yellow.
 - Red.
 - Brown.
112. ____ At what point during the AC cycle does the cleaning action occur?
- Positive half cycle.
 - Negative half cycle.
 - The very start.
 - The very end.
113. ____ What is the cause of root suck back?
- Arc length too long and excessive pre-heat.
 - Arc length too short and incorrect fit-up.
 - Improper position of filler metal addition, current too low and travel speed too fast.
 - Improper position of filler metal addition, current too high and travel speed too slow.
114. ____ When using GTAW on aluminum, what is the cause of a convex fillet weld?
- Adding too much filler metal, travel speed too fast, current too low.
 - Adding too much filler metal, travel speed too slow, current too low.
 - Adding too much filler metal, travel speed too fast, current too high.
 - Adding too much filler metal, travel speed too slow, current too high.

115. _____ Which of the following is an advantage of pulsed GTAW?
- Decreased depth to width ratio.
 - Wider heat affected zone.
 - Reduction in porosity and incomplete fusion.
 - Increased burn through.
116. _____ What does the up slope/down slope option do for GTAW?
- Adjusts the current through use of a foot pedal.
 - Gives a short burst of amperage at the arc initiation then reduces current prior to arc shut off.
 - Controls the time response from arc initiation to full welding current.
 - Adjusts the amount of time shielding gas flows prior to arc initiation and after the arc has shut off.
117. _____ What is the recommended power source to use with SAW with small diameter electrodes $5/64 - 1/8$ " (2.0 – 3.2mm)?
- CC coupled with a voltage sensing wire feeder.
 - CV coupled with a constant speed wire feeder.
 - CC coupled with a constant speed wire feeder.
 - CV coupled with a voltage sensing wire feeder.
118. _____ Which type of flux can be re-used in SAW?
- Bonded.
 - Agglomerated.
 - Fused.
 - Rutile based.
119. _____ What would be the proper stick out of a $1/16$ " (1.6mm) diameter wire?
- $7/16$ " (11mm).
 - $1/2$ " (13mm).
 - $9/16$ " (14mm).
 - $5/8$ " (16mm).
120. _____ Which of the following would have the most effect when using SAW?
- Voltage.
 - Amperage.
 - Travel speed.
 - Type of flux used.
121. _____ What variations of welding does Stud Arc Welding use?
- Arc welding and forge welding.
 - Arc welding and electroslag welding.
 - Arc welding and electrogas welding.
 - Arc welding and plasma arc welding.

122. _____ What would be the current type and polarity used for welding studs onto steel?
- DCEP.
 - DCEN.
 - AC/DC.
 - ACHF.
123. _____ In what industry is spot welding most common?
- Oil and gas.
 - Automotive.
 - Agriculture.
 - Forestry.
124. _____ When Resistance Spot Welding, if exerted pressure between contact tips is increased, what must happen to the welding current?
- Welding current decreases.
 - Welding current increases
 - Welding current remains unchanged.
 - Welding current is unaffected by the exerted pressure.
125. _____ What is the advantage of spot welding on light gauge material?
- It can be adapted to any arc welding power source.
 - It increases production speed and lowers distortion.
 - It does not require a shielding gas.
 - It gives deeper penetration.