JONES COUNTY CAREER-TECHNICAL CENTER

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Dear Parents and Career Tech Students:

As we work towards the end of the school year the Faculty, Staff and Administration of the Jones County Career Technical Center, is providing additional enrichment activities for our students and support for our parents as we continue through these difficult times.

The following Part 2 enrichment activities will allow students to continue reviewing the instruction that they already have received this year.

Again you will find questions with answers for you to study and review. There are no assignments to be returned to school.

If the JCCTC can be of any assistance to our students and parents with the enrichment activities, please feel free to call us at 601-425-2378 between the hours of 9:00 a.m. and 1:00 p.m. or contact the instructor by email. Email addresses are located under the program name on our webpage.

Sincerely,

Rex Buckhaults

Rex Buckhaults
Director, JCCTC

Program Enrichment 2ND Year Welding

1. The drawings that contain all of the information necessary to make a part are called _____.

a. civil drawings
b. detail drawings
c. assembly drawings
d. structural drawings

2. The type of drawing that depicts the weldment that must be fabricated and the pieces to be joined by welding is the _____.
a. section view
b. isometric view
c. assembly drawing
d. welding detail drawing

3. In welding detail drawings, welding symbols are used to show how the pieces are to be _____.
a. cut
b. joined
c. aligned
d. machined

4. The main purpose of an assembly drawing is to show how the parts are _____.
a. to be used
b. to be cut
c. going to appear in three dimensions
d. put together in relation to one another

5. A thin, solid line with zigzags is called a(n) _____.
a. object line
b. leader line
c. dimension line
d. long break line

6. The two basic methods for dimensioning a part on a welding drawing are baseline and _____.
a. conventional dimensioning
b. reference dimensioning
c. ordinate dimensioning
d. linear dimensioning

7. In a print, a list of all the parts required to fabricate an object would be found in the _____.
a. bill of materials
b. exploded view
c. local notes
d. title notes

8. A dimension obtained by adding or subtracting other dimensions found on a welding drawing is known as a _____.
a. baseline dimension
b. standard dimension
c. reference dimension
d. conventional dimension

9. When the ends, sides, or corners of an object are to be rounded, what is shown and dimensioned?
a. A radius
b. A chamfer
c. An extension
d. A counterbore

10. A note that provides a detailed description of requirements for the type and size of parts or material required is known as a _____.
a. mark
b. parts list
c. specification
d. schedule of parts

ANSWERS

1. b
2. d
3. b
4. d
5. d
6. a
7. a
8. c
9. a
10. c

1. The welding process that uses flux-cored wire without the use of an external shielding gas is called _____.
a. gas-shielded FCAW (FCAW-G)
b. shielded metal arc welding (SMAW)
c. gas metal arc welding (GMAW)
d. self-shielding FCAW (FCAW-S)

2. If the tongue and lace area of a welder's safety shoes are exposed, the welder should _____.
a. add cotton boot covers
b. wear leather spats or chaps
c. position the exposed area away from the arc
d. use shielding gas to protect the exposed area

3. A powered extraction system is a valuable tool for _____.
a. feeding wire electrode
b. removing welding fumes
c. directing shielding gas
d. reducing welding spatter

4. Spray transfer, globular transfer, and pulsed transfer are _____.
a. GMAW metal transfer modes
b. SMAW metal transfer modes
c. types of GMAW/FCAW guns
d. types of external wire feeders

5. A variation of spray transfer welding in which current is cycled from high to low is _____.
a. short circuit welding
b. globular transfer welding
c. radial transfer welding
d. pulsed transfer welding

6. Which shielding gas improves FCAW weld penetration?
a. Argon
b. Carbon dioxide
c. Oxygen
d. Hydrogen

7. The operating voltage of a welding machine, which is produced during welding, is also known as the _____.
a. open-circuit voltage
b. utility voltage
c. primary input voltage
d. arc voltage

8. In engines that power generators, the engine speed is controlled by _____.
a. governors
b. rectifiers
c. transformers
d. alternators

9. A duty cycle is the percentage of a 10-minute period during which a welding machine can continuously _____.
a. maintain a constant voltage as the output current varies
b. produce a constant current over a wide voltage range
c. produce its rated amperage without overheating
d. establish an arc between the end of the wire electrode and the workpiece

10. Welder power sources usually contain controls for adjusting arc voltage, slope, and _____.
a. resistance
b. inductance
c. capacitance
d. conductance

11. Welding cable end connection styles typically consist of _____.
a. lugs and quick disconnects
b. splices and fork terminals
c. alligator clips and C clamps
d. spools and clips

12. The device that pulls the electrode wire from a spool and pushes it through the gun cable and gun is known
as a(n) _____.
a. spool gun
b. closed-loop unit
c. push-pull extractor
d. wire feeder

13. The electrical connection between the welding current and the electrode wire is provided by the _____.
a. nozzle
b. weld puddle
c. shielding gas
d. contact tip

14. To prevent contamination of the weld puddle, shielding gases are used to displace what from the weld zone?
a. Dross
b. Argon
c. Atmosphere
d. Carbon deposits

15. Which of the following is a correct statement regarding the selection and/or connection of shielding-gas cylinders to the welding equipment?
a. The shielding gas selection is not important; all of the available gases do an equal job in all welding applications.
b. Remove the cylinder's protective cap, momentarily crack the cylinder valve open to blow out any dirt, and then close it.
c. Install the regulator/flowmeter assembly first, then crack the cylinder valve open to blow out any dirt and debris.
d. When using argon as a shielding gas, special precautions and respirators are required due to its toxicity.

16. If a spool of welding wire meets specifications, but does not include a record of chemical composition or strength, it is assumed that the wire is intended for _____.
a. rigid control fabrication
b. private use only
c. critical use
d. general use

17. Welding wire that has been graded for rigid control fabrication comes with a(n) _____.
a. AWS guarantee for chemical safety
b. Certificate of Conformance
c. set of cast and helix instructions
d. Certified Chemical Analysis report

18. Filler wire that is used on aircraft, nuclear reactors, and pressure vessels is graded as _____.
a. critical use
b. general use
c. high-grade pure alloy
d. rigid control fabrication

19. All carbon steel filler metals used for GMAW contain _____.
a. a flux core
b. slag
c. alloys
d. shielding gases

20. The two AWS classifications for FCAW electrodes are _____.
a. solid and fluxed
b. small and large
c. fixed and open
d. ferrous and nonferrous

ANSWERS

1. d
2. b
3. b
4. a
5. d
6. b
7. d
8. a
9. c
10. b
11. a
12. d
13. d
14. c
15. b
16. d
17. b
18. a
19. c
20. c

1. If a composite-cored electrode is used in a GMAW process, the electrode produces _____.
a. shielding gas
b. shielding gas and flux
c. filler metal
d. filler metal and shielding gas

2. The lenses used in safety glasses, face shields, or helmets worn during GMAW procedures must be _____.
a. made of glass
b. properly tinted
c. spatter resistant
d. opaque and blued

3. During a GMAW procedure, a powered extraction system is often an essential tool for _____.
a. removing welding fumes
b. feeding wire electrode
c. directing shielding gas
d. reducing welding spatter

4. During welding preparations, what should be set up around the welding area?
a. Oxygen cylinders
b. Cotton curtains
c. Arc blowers
d. Welding curtains

5. Once a GMAW machine is turned on during startup, the next step is to _____.
a. purge the gun as directed
b. select the shielding gas
c. close the primary disconnect
d. create a root bead

6. If the wire feed speed is decreased during GMAW, the voltage must _____.
a. increase
b. dissipate
c. decrease
d. remain constant

7. With GMAW equipment, faster weld travel speeds build _____.
a. uniform beads with maximum penetration
b. smaller beads with less penetration
c. higher beads with no penetration
d. larger beads with deeper penetration

8. Depending upon the transfer mode being used, GMAW electrode extension lengths vary from 1/4" (6.4 mm) to _____.
a. 1/2" (12.7 mm)
b. 3/4" (19.1 mm)
c. 1" (25.4 mm)
d. 2" (50.8 mm)

9. An improperly made GMAW restart will create a(n) _____.
a. bead overlap
b. weave bead
c. stringer bead
d. weld discontinuity

10. Weld beads that are used to build up a surface and to make multiple-pass welds are known as _____.
a. fillet beads
b. layer beads
c. crater beads
d. overlapping beads

11. To control the amount of metal buildup when performing flat fillet welds with GMAW, the welder should _____.
a. cool the practice coupon in water
b. clean the weld with solvent
c. increase or decrease the travel speed
d. run the root pass with a 90-degree work angle

12. What kind of bead pattern should be avoided when welding stainless steel with GMAW equipment?
a. Downhill
b. Weave
c. Stringer
d. Fillet

13. The most difficult part of making an open V-groove weld is the _____.
a. travel angle
b. undercut
c. root pass
d. keyhole

14. A flat position open V-groove weld is acceptable if it has complete fusion at the toes of the weld and a smooth, flat _____.
a. cross section
b. transition
c. overlap
d. crater

15. When making vertical GMAW open V-groove welds with weave beads, which weave pattern should be used?
a. Zigzag
b. Circular
c. Square-shaped
d. Crescent-shaped

ANSWERS
1. c
2. b
3. a
4. d
5. a
6. c
7. b
8. c
9. d
10. d
11. c
12. b
13. c
14. b
15. a

1. In FCAW-S, the flux inside the wire core contains ingredients that _____.
a. cause arc flutter
b. oxidize the weld
c. generate a shielding gas
d. prevent slag from forming

2. If a hard hat is required during a welding operation, the hat should allow for the attachment of _____.
a. shielding gas tubing
b. a portable air vacuum
c. rear deflector material
d. leather side spats

3. During welding preparations, what should be set up around the welding area?
a. Oxygen cylinders
b. Cotton curtains
c. Arc blowers
d. Flash shields

4. For FCAW open V-groove welds on carbon steel, the bevel angle of the coupons should be _____.
a. 22-1/2 to 37-1/2 degrees
b. 30 to 37-1/2 degrees
c. 45 degrees
d. 60 degrees

5. With FCAW equipment, slower weld travel speeds build _____.
a. uniform beads with maximum penetration
b. higher beads with greater penetration
c. higher beads with no penetration
d. smaller beads with less penetration

6. The travel angle created when the gun is tilted back so that the electrode tip precedes the gun in the direction of the weld is called a _____.
a. neutral angle
b. drag angle
c. push angle
d. pull angle

7. The term stickout refers to the distance _____.
a. from the tip of the electrode wire to the workpiece surface
b. from the tip of the electrode wire to the wire feeder equipment
c. the electrode extends beyond the contact tip of the welding gun
d. from the nozzle to the end of the electrode

8. Increasing electrode extension in FCAW welding increases _____.
a. spatter
b. preheating
c. strike
d. oxidation

9. With weld terminations, what do welding codes require be filled to the full cross-section of the weld?
a. weld porosity
b. the bead
c. the root
d. the crater

10. The process of depositing connective weld beads parallel to one another is known as _____.
a. padding
b. stringing
c. pooling
d. weaving

11. The distance that a weld extends above a line drawn between the toes of the weld is called _____.
a. weld axis
b. convexity
c. undercut
d. overlap

12. To control the amount of metal buildup when performing flat fillet welds with FCAW, the welder should _____.
a. cool the practice coupon in water
b. clean the weld with solvent
c. increase or decrease the travel speed
d. run the root pass with a 90-degree work angle

13. What kind of bead pattern should be avoided when welding stainless steel with FCAW equipment?
a. Downhill
b. Weave
c. Stringer
d. Fillet

14. When making vertical FCAW V-groove welds with weave beads, which weave pattern should be used?
a. Zigzag
b. Circular
c. Square-shaped
d. Crescent-shaped

15. One of the criteria for an acceptable overhead V-groove weld done with stringer beads is that the bead width must be uniform within _____.
a. ±1/16" (1.6 mm)
b. ±1/8" (3.2 mm)
c. ±3/8" (9.5 mm)
d. ±1/2" (12.7 mm)

ANSWERS
1. c
2. c
3. d
4. b
5. b
6. c
7. d
8. b
9. d
10. a
11. b
12. c
13. b
14. a
15. a