

Unit Three Exam – Answer Key

1. Name 2 organizations that create welding codes for WPS's?
 - American Welding Society (AWS)
 - American Society of Mechanical Engineers (ASME)
 - American Petroleum Institute (API)
 - International Organization for Standardization (ISO)
 - Canadian Standards Association (CSA)
 - European Committee for Standardization (CEN)
2. Fill in the blank of the missing step to qualify a Welding Procedure and Certifying a Welder.
 1. **Analyzing Design of Joint**
 2. Write a Welding Procedure Specification
 3. Qualify welding procedure
 4. Qualify welder
 5. Certify welder
3. Analyzing Design includes all the following except which one?
 - a) Joint design
 - b) Weld type
 - c) filler wire size being used**
 - d) Location of weld
4. A Certified Welding Inspector or Welding Engineer has to create a certified WPS.
 - a) True**
 - b) False
5. A welding procedure can pass as long as only 1 test fails and no more than 1.
 - a) True
 - b) False**
6. A Certified Welding Inspector does not need to be present while a welder is testing to ensure that the test was completed in accordance to the WPS.
 - a) True
 - b) False**

READING A WPS

Name the following positions by their alternative number:

7. Flat Position = **One (1)**
8. Horizontal = **Two (2)**

Name the following positions with their alternative name:

9. 4 = **Overhead**

10. 3 = **Vertical**

11. The “G” in a “1G” position would be talking about what type of weld?

- a) Overhead
- b) Groove**
- c) V-groove
- d) Vertical

12. The “F” in a “4F” position would be talking about what type of weld?

- a) First
- b) Four
- c) Flat
- d) Fillet**

13. What is not a type of transfer mode for GMAW?

- a) Short circuit
- b) Pulse
- c) Spray
- d) Groove**
- e) Globular

14. The number of welding passes would be found in this area on the WPS.

- a) Base Metals & Filler Metals
- b) Shielding Gas
- c) Technique**
- d) Preheat

15. As long as you follow at least half of the WPS, you will be able to create a quality, certified weld.

- a) True
- b) False**

NON-DESTRUCTIVE TESTING

16. What type is not a Non-Destructive Examination?

- a) Visual
- b) Liquid Penetrant
- c) Magnetic Particle
- d) Hypersonic**
- e) Radiographic

17. When is a Visual Examination done?

- a) After by an instructor
- b) After, by both an instructor and the welder themselves
- c) **Before, during, after the weld is made**
- d) Never, a visual exam doesn't do any good

18. Name 4 of the 8 Visual Examination Tools

- 1. **Fillet weld gauge**
- 2. **Palmgren gauge**
- 3. **A gauge used for undercut**
- 4. **Feeler gauges for overlap**
- 5. **Micrometer**
- 6. **Caliper**
- 7. **Steel ruler**
- 8. **Tape measure**

19. Magnetic Particle Examination can be used with Aluminum.

- a) True
- b) **False**

20. Ultrasonic Examination uses all the following except what?

- a) Uses sound waves to detect surface and subsurface flaws
- b) A transducer
- c) **Little to no skill level needed to examine because the ultrasound does it for you**

21. What type of rays penetrates metal to show Radiographic Examination results?

- a) **Gamma rays**
- b) Subsurface rays
- c) Tungsten rays
- d) Radiographic rays

DESTRUCTIVE TESTING

22. Destructive Testing is used to test which of the following?

- a) Welded products
- b) Welds
- c) Filler metals
- d) Base metals
- e) Welding Procedure Specifications (WPS)
- f) **All of the above**

23. Name 3 of the 6 types of Destructive Testing

1. Tension testing
2. Impact testing
3. Bend testing
4. Nick Break testing
5. Fillet Weld Break testing
6. Etch testing

24. Tension Testing measures what?

- a) How good root penetration is
- b) Heat Input to a weld
- c) How much a material can withstand being pulled apart
- d) Toughness of base metals
- e) Toughness of filler metals

25. Impact Testing is typically performed in a lab environment.

- a) True
- b) False

26. Bend Testing is commonly used to qualify welders and welding procedures (WPS).

- a) True
- b) False

27. Explain what usually happens in a Break Test

A welder performs a weld, the weld is broken by a hammer or in destructive equipment, and then the broken weld is examined for defects

28. The Nick Break Test usually tests specimens from?

- a) A fillet weld
- b) A groove weld
- c) A lap joint
- d) A T-joint

29. Etch Testing is used to?

- a) Inspect the work angle a welder used during a weld
- b) Inspect the travel angle a welder used during a weld
- c) Inspect for soundness of welds and metals

30. Etch Testing has two types of tests, what are they?

- a) Macro & Micro
- b) Macro & Minnie
- c) Micro & Major
- d) Minor & Major