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Continuing Education Course #375  
ASME Welding Qualifications  
Part I Welding Procedures

1. "Supplementary Essential Variables" \_\_\_\_
  - a. are required when the product welded has toughness requirements.
  - b. When required, are treated the same as "Essential Variables"
  - c. Both a and b
  - d. Are for controlling weld chemistry
2. The acceptance criteria for a tensile test are \_\_\_\_\_.
  - a. the specified tensile strength of the weaker base metal
  - b. it breaks within the weld
  - c. no open defects exceeding 1/8 inch
  - d. it breaks within the base metal
3. You may perform additional qualification testing for a specific weld after the initial qualification and document this as a PQR Supplement provided \_\_\_\_\_.
  - a. you do not alter the original approved PQR
  - b. you repeat the essential variables of the original PQR on the supplement sample(s)
  - c. you cross-reference the Supplement to the original PQR
  - d. all of the above
4. Changing an "Essential Variable" in a WPS \_\_\_\_\_.
  - a. requires documenting the change on the work control documents with no further testing required
  - b. Requires a new procedure qualification incorporating the revised Essential Variables.
  - c. Is not permitted
  - d. Is only permitted when the product is to be impact tested
5. Charpy impact testing is used to assess \_\_\_\_\_.
  - a. Toughness
  - b. Endurance limit
  - c. Strength
  - d. Corrosion resistance
6. F-Numbers and A-Numbers are always Essential Variables. AWS Classification within an A-Number/F-Number grouping is also an Essential Variable when \_\_\_\_\_. (Hint: AWS Classification is a Supplementary Essential Variable.)
  - a. always
  - b. when the product welded has toughness requirements
  - c. never
  - d. when the product welded does not have toughness requirements

7. Procedure Qualification Records (PQRs) are usually valid for:

- a. Five years
- b. Ten years
- c. Six months
- d. Forever

8. A WPS listing the weld variables may consist of:

- a. A single tabular sheet
- b. A single sheet plus Work Order/Traveler instructions
- c. A single sheet plus overarching documents
- d. Any combination of the above

9. A root bend test places the \_\_\_\_\_ of the weld in tension.

- a. either side
- b. root
- c. face
- d. side containing a questionable indication

10. Testing of the completed qualification weld (e.g. bend testing, tensile testing, etc.) \_\_\_\_\_.

- a. Must be performed by your company
- b. May be performed by any competent group
- c. Is never required
- d. May be accepted or rejected by any competent group

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