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NEW QUESTION: 1

The inspection interval between internal or on-stream inspection shall not exceed which of the following?

- A. One half the estimated remaining life or 10 years whichever is less
- B. One half the estimated remaining life or 15 years whichever is greater
- C. One half the estimated remaining life or 10 years whichever is greater
- D. One half the estimated remaining life or 15 years whichever is less

Answer: A ([LEAVE A REPLY](#))

NEW QUESTION: 2

Fillet welded on patches require special design considerations, especially relating to which of the following?

- A. None of the above
- B. Shape of the patch
- C. Length of previous services of the vessel
- D. Efficiency

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 3

What can be done to extend the life of a vessel with a corroded area in the shell plate 6 inches from the weld, a joint efficiency of less than 1, and a corrosion thickness currently near the minimum required thickness?

- A. Recalculate t minimum for current operating conditions using $E = 1$.
- B. Monitor the thickness during the run
- C. Recalculate t minimum for current operating conditions using $E < 1$.
- D. Recalculate t minimum for design conditions using $E = 1$.

Answer: B ([LEAVE A REPLY](#))

NEW QUESTION: 4

Whose authorization is required as a minimum prior to the start of any repairs or alterations?

- A. The authorized pressure vessel inspector
- B. The maintenance manager
- C. The insurance company
- D. The production manager

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 5

When developing an inspection plan for equipment operating at elevated temperatures, _____ having knowledge of elevated temperature and metallurgical effects on vessel materials of construction should be consulted

- A. An authorized Inspector
- B. A corrosion specialist
- C. A registered professional engineer
- D. A pressure vessel repair organization

Answer: ([SHOW ANSWER](#))

NEW QUESTION: 6

When a RBI assessment is used to increase the typical 10 year inspection limit, it shall be reviewed by a pressure vessel engineer and authorized inspectors at intervals not exceed which of the following?

- A. 5 years
- B. 20 years
- C. 15 years
- D. 10 years

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 7

A SME Sec. VIII Div.1 is based on factor of safety equal to

- A. 3
- B. 4
- C. 3.5
- D. 2.5

Answer: C ([LEAVE A REPLY](#))

The safety factor was previously "4" but with better manufacturing and quality over the years, the factor of safety was reduced to 3.5

NEW QUESTION: 8

When the half bead or temper bead technique of repair is proposed, the first consideration that must be given should be;

- A. Close monitoring of the welding operation
- B. Consultation with the jurisdictional requirements
- C. A metallurgical review conducted by an engineer shall be performed to assure the proposed alternative is suitable for the application
- D. Time required to do the repair, and personnel safety

Answer: ([SHOW ANSWER](#))

NEW QUESTION: 9

During vessel repairs or alterations, who is required to maintain the welding records?

- A. welding inspector
- B. repair organization owner/user
- C. authorized inspector
- D. pressure vessel engineer

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 10

The internal inspection interval must be reviewed whenever changes occur that could affect the degradation of the vessel. In which of the following situations does a review of the internal interval need not be conducted?

- A. fluid composition changes
- B. operating pressure increases
- C. operating temperature increases
- D. operating pressure decreases

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 11

Which of the following relief devices is intended to work with steam boilers?

- A. Safety Valve.
- B. Balanced Safety Relief.
- C. Safety Relief Valve.
- D. Relief Valve.

Answer: ([SHOW ANSWER](#))

NEW QUESTION: 12

API 510 covers vessels constructed to which fabrication codes?

- A. only ASME B&PV Section VIII and the API/ASME Code for Unfired Pressure Vessels
- B. ASME B&PV Section VIII and other current codes (except French vessel code)
- C. any fabrication code
- D. only ASME B&PV Section VIII

Answer: A ([LEAVE A REPLY](#))

NEW QUESTION: 13

When calculating the MAWP based on a weld joint factor less than 1.0, the surface of the weld is identified by which of the following?

- A.** The surface of the weld includes 2 inches or twice minimum thickness on either side of the weld, whichever is less
- B.** The surface of the weld includes 1 inch or twice minimum thickness on either side of the weld, whichever is less
- C.** The surface of the weld includes 2 inches or twice minimum thickness on either side of the weld, whichever is less
- D.** The surface of the weld includes 1 inches or twice minimum thickness on either side of the weld, whichever is less

Answer: B ([LEAVE A REPLY](#))

NEW QUESTION: 14

Identify incorrect statement from following, if any.

- A.** A welder performing procedure test is also qualified in that position.
- B.** For procedure qualification, the test can be performed in any position as the position is not essential variable for procedure qualification
- C.** WP S & WPQ have the same qualification requirements.
- D.** Supplementary essential variables become essential variables when impact test is specified.

Answer: D ([LEAVE A REPLY](#))

changing Essential parameters of a WP S requires a brand new FOR while changing the non-essential parameters, does not invalidate the existing FOR but the WP S need to be revised anyway even when non-essential parameters are changed. PQR is a record of actual values of essential parameters used while welding the test coupon. Non-essential parameters can also be noted within a FOR if actually measured at the time of welding the test coupon but is not mandatory. PQR also include the mechanical test result (for example, tensile test and may be Charpy test, if toughness is an issue) and any NDE result, if done. FOR cannot be revised except minor clerical changes such as typo error.

NEW QUESTION: 15

An inspector should be stricter while carrying out inspection on:

- A.** Circumferential Joints
- B.** Longitudinal Joint
- C.** Both are equally critical as per ASME Sec. VIII, Div.1
- D.** Depends on QA plan

Answer: B ([LEAVE A REPLY](#))

Because of hoop stress, the longitudinal joint has to tolerate roughly twice of stress applied on circumferential weld.

NEW QUESTION: 16

A stainless steel weld has a crack open to the surface. Which NDT method will reveal it most effectively?

- A. Liquid Penetrant
- B. Magnetic particle
- C. UT
- D. Radiography

Answer: A (LEAVE A REPLY)

SS cannot be tested by MT because SS is not ferromagnetic. RT and UT discontinuities out they are basically suited for internal or volumetric discontinuities,

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NEW QUESTION: 17

For alterations or repairs on vessels that were previously post-weld heat treated as a code requirement and fabricated of P-1 and P-3 materials, preheating is not to be less than _____ may be considered as an alternative to PWHT.

- A. 700°F
- B. 900°F
- C. 300°F
- D. 500°F

Answer: C (LEAVE A REPLY)

NEW QUESTION: 18

In certain MT Check of pressure Vessel, The size of "indication" for a certain discontinuity was seen as 4 mm but after the MP Check and using magnifying glass it was seen having actual size as 2.5mm only. If stipulated acceptance criterion for that type of discontinuity was 3 mm, your decision is:

- A. The size of indication is higher than 3mm. Reject
- B. The size of discontinuity is lower than 3 mm, Accept.
- C. Depends on opinion of Examiner.

D. Depends on the procedure adopted for MPI, i.e. dry or wet particles.

Answer: A (LEAVE A REPLY)

the original procedure prescribes naked eye visual check during MT. If you accept the weld based on result obtained by magnifying glass, then you have to revise and re qualify the procedure and repeat the test on every area performed by previous procedure.

NEW QUESTION: 19

PT examination is used to detect the surface cracks in welds as well as in base metal plates. For proper detection,

A. We should allow higher penetrant time on weld

B. Depends on type of penetrant used.

C. We should allow higher penetrant time on base metal or plates than welds

D. Penetrant time on weld as well as plates is same

Answer: B (LEAVE A REPLY)

Welds have rough surface compared to parent material and hence the penetrant can seep inside the weld discontinuities easier and faster. see ASME V; Table T-672 Minimum Dwell Times; pp. 219

NEW QUESTION: 20

Determine in what two ways may the probable corrosion rate for a new vessel be determined before the first internal inspection?

A. From data collected on vessels providing the same or similar service or from published data on vessels providing comparable service

B. Assuming a standard corrosion rate

C. Employing highly experienced inspectors or engineers

D. Corrosion tabs and UT readings

Answer: A (LEAVE A REPLY)

NEW QUESTION: 21

When does the API-510 Inspection Code apply?

A. Only pressure vessels being fabricated for refinery/petro-chemical service

B. Vessels after they have been placed in service

C. Pressure vessel being fabricated to ASME Section VIII, Division 1 or 2

D. Vessels constructed to API-572

Answer: C (LEAVE A REPLY)

NEW QUESTION: 22

The symbol which indicates ASME code stamping for vessels manufactured to ASME Section VIII Div.1 is

A. UI

B. U3

- C. U
- D. U2

Answer: (SHOW ANSWER)

U1 is the form filled in by the manufacturer and U2 is filled in by partial Manufacturer of parts. There is no U3 form or stamp, only "U" stamp.

NEW QUESTION: 23

As per ASME Sec. VIII Div. 1, "Weld joint category" means:

- A. Type of weld, i.e., Single V type, Double V type, U type etc.
- B. Type of weld, i.e., Full penetration, partial penetration etc.
- C. Location of weld, i.e., longitudinal, circumferential nozzle attachment welds etc.
- D. Type of weld joint, i.e., Butt-weld joint, fillet weld joint, lap joint, etc

Answer: C (LEAVE A REPLY)

Location of the weld dictates category of the weld because it is the location that dictates the importance of the weld and the amount and type of stresses that is applied on the weld. See ASME VIII, Figure UW-3 Illustration of Welded Joint Locations Typical of Categories A, B, C, and D, pp. 116. Category of the weld also affects the weld joint efficiency apart from percentage of radiography, see ASME VIII, Table UW-12 Maximum Allowable Joint Efficiencies for Welded Joints; pp. 121

NEW QUESTION: 24

Pneumatic testing may be substituted for hydrostatic testing provided all but which of the following?

- A. Temperature
- B. Process
- C. Water is not readily available
- D. Refractory

Answer: C (LEAVE A REPLY)

NEW QUESTION: 25

What two conditions should be considered in selecting the techniques(s) to be used for the inspection of a pressure vessel?

- A. The condition of the vessel and the environment in which the vessel operates
- B. The condition of the vessel and the recommendations described by NBIC
- C. The recommendation of the repair organization and the environment in which the vessel operates
- D. The condition of the vessel and the recommendations of the repair organization

Answer: A (LEAVE A REPLY)

NEW QUESTION: 26

The remaining life of a vessel is 24 years. What is the maximum interval for the internal inspection?

- A. 5 years
- B. 6 years
- C. 10 years
- D. 12 years

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 27

For an above ground 'higher risk' vessel the maximum interval between external visual inspections is:

- A. 3 years
- B. 10 years or 1/2-remaining corrosion rate life, whichever is less
- C. There is no maximum interval
- D. 5 years

Answer: B ([LEAVE A REPLY](#))

NEW QUESTION: 28

When determining the corrosion rate for a new vessel involved in changes in service conditions and the probable corrosion rate cannot be determined by either available data or experience of the owner/user, on-stream determination shall be made. What is the length of service recommended by API-510?

- A. 100 months
- B. 1000 days
- C. 1000 hours
- D. 1000 weeks

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 29

Inspection for corrosion under insulation (CUI) shall be considered for externally insulated vessels subject to moisture ingress and that operate between which of the following temperature range?

- A. 275°F and 450°F for austenitic stainless steels
- B. 175°F and 350°F for austenitic stainless steels
- C. 20°F and 350°F for carbon and low alloy steels
- D. 10°F and 350°F for carbon and low alloy steels

Answer: ([SHOW ANSWER](#))

NEW QUESTION: 30

When performing an external inspection on a vessel what consideration should be given to the external insulation?

- A. It shall always be removed to inspect underneath
- B. Select portions must be removed for inspections
- C. You may not use any plug locations used for UT thickness reading to inspect the vessel
- D. If insulation is in good condition and the vessel operates within the high and low temperatures stated in API 510, removal of insulation is not necessary for inspection of the vessel

Answer: D (LEAVE A REPLY)

NEW QUESTION: 31

Term "E" used in shell thickness formula in AWE Sec. VIII Div.1, represents weld joint efficiency, whose value is equal to "1", if:

- A. Both welds are spot radio graphed
- B. Longitudinal welds are radio graphed for their entire length and circumferential welds are spot radio graphed.
- C. Longitudinal and circumferential welds are radio graphed for their entire length
- D. Both a and b

Answer: B (LEAVE A REPLY)

circumferential just need a spot radiography to attain joint efficiency of "1" but longitudinal welds undergo a hoop stress as well and roughly twice of the stress applied on a circumferential joint and hence require full radiography to attain a joint efficiency of "1".

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NEW QUESTION: 32

If local post-weld heat treatment is to be substituted for 360 degree banding, who is required to develop the procedure?

- A. The authorized pressure vessel inspector
- B. The repair organization
- C. The owner user
- D. A pressure vessel engineer experienced in the appropriate engineering specialties

Answer: D (LEAVE A REPLY)

NEW QUESTION: 33

What is the recommended shell temperature, per API 510 during a hydrostatic test of a vessel, 1"thick?

- A. 30 ° F above testing liquids temperature
- B. 65 ° F above ambient
- C. 10 ° F above MDMT
- D. 30 ° F above ambient

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 34

Unless there is indicative information on the brittle characteristics of the vessel material, the test temperature of the metal during a pressure test need not exceed what temperature?

- A. 120°F
- B. 130°F
- C. 60°F
- D. 200°F

Answer: ([SHOW ANSWER](#))

NEW QUESTION: 35

Temporary repairs to pressure vessels:

- A. may remain in place for long periods if approved by the API-authorized pressure vessel inspector.
- B. may remain in place for long periods if approved by the pressure vessel engineer.
- C. may remain in place permanently if approved by the pressure vessel engineer and the API authorized pressure vessel inspector.
- D. must be replaced with permanent repairs during the next scheduled shutdown.

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 36

After a new vessel has been installed, what must be done in order accept the vessel for operation?

- A. A first internal inspection, however if a manufactures' data report (U1) assuring that the vessel is satisfactory for its intended service is available the first internal may be waived
- B. Base line thickness readings must be taken per API 572
- C. Base line thickness reading must be taken per NBIC regulation 6
- D. A first internal inspection.

Answer: A ([LEAVE A REPLY](#))

NEW QUESTION: 37

When a corroded area of considerable size is encountered and the circumferential stresses govern, what is maximum length over which the thickness can be averaged for a vessel with an inside diameter of 48 inches?

- A. 25 percent of the vessel diameter
- B. 24 inches
- C. 20 percent of the vessel diameter
- D. 20 inches

Answer: [\(SHOW ANSWER\)](#)

NEW QUESTION: 38

The API authorized pressure vessel inspector may give prior authorization for repairs that do not involve:

- A. Pressure tests
- B. Pneumatic testing
- C. Radiography
- D. Final visual inspections

Answer: B [\(LEAVE A REPLY\)](#)

NEW QUESTION: 39

An internal inspection is required on above the ground 'Lower-risk' vessels:

- A. At the half corrosion-rate life
- B. Every 4 years
- C. Every 10 years.
- D. Any signs of leakage or deterioration detected in the interval between inspections

Answer: D [\(LEAVE A REPLY\)](#)

NEW QUESTION: 40

Flush (insert) patches shall be installed with full penetration butt joints and the corners shall be what type?

- A. The corners shall be provided with a 6 inch radius
- B. The corners shall be rounded 1 inch minimum radius
- C. The corners shall be provided with a 3 inch radius
- D. The corners shall be squared

Answer: C [\(LEAVE A REPLY\)](#)

NEW QUESTION: 41

When discussing repairs to a pressure vessel what is the definition of 'construction codes'?

- A. The current ASME Code edition
- B. The NBIC
- C. The API 510 Code

D. The Code the vessel was constructed to including non-standard and jurisdictional special vessels

Answer: D ([LEAVE A REPLY](#))

NEW QUESTION: 42

If a vessel is subjected to temperatures above design, what may happen

A. Precipitation at the grain boundaries may occur.

B. Creep of the vessel's material may occur

C. The relief device may fail

D. The rupture disk may implode

Answer: B ([LEAVE A REPLY](#))

NEW QUESTION: 43

The definition of a construction code is?

A. Any standard used to repair vessel

B. The Code or standard to which a vessel was originally built

C. Any technique of construction

D. Any standard used to build a vessel

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 44

After a vessel has been placed in service, what Code is used to evaluate?

A. API 510

B. ASME Section VIII

C. API 572

D. ASME Section V

Answer: C ([LEAVE A REPLY](#))

NEW QUESTION: 45

After an alteration to a pressure vessel, in lieu of a hydrostatic test, special inspection procedures will be carried out. What must be done prior to carrying out the special inspection procedures?

A. Review all NDE procedures prior to commencement of the NDE used to waive the hydrostatic test requirement

B. Make certain it is permitted by any jurisdictional rules that may exist and consult with an engineer experienced in pressure vessel design and the Authorized Pressure Vessel Inspector

C. Check with the NBIC Authorized inspector

D. Consult with the chief inspector of the jurisdiction

Answer: B ([LEAVE A REPLY](#))

NEW QUESTION: 46

One of the steps when rating a pressure vessel is the documentation of the:

- A. Calculations from the manufacturer or the owner-user's engineer
- B. Approval of the operation's engineering department
- C. Approval of the ASME
- D. Report from an external professional engineer

Answer: D ([LEAVE A REPLY](#))

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NEW QUESTION: 47

When a crack is discovered in a vessel that is in a highly stressed area, what action should you recommend to be considered as a first step in any effort to correct the flaw?

- A. Call in a pressure vessel engineer
- B. Using an insert patch, to completely remove the affected area
- C. Design an overlay patch to completely cover the affected area that has rounded corners
- D. Removing the crack using by grinding and inspect using an NDE procedure before repair by welding

Answer: B ([LEAVE A REPLY](#))

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