
Question: 1

Following are the critical variables for deterioration mechanism except

- A. Material of construction
- B. Process operating
- C. Start up and shut down conditions
- D. Insulation

Answer: D

Question: 2

Following are the common mechanical deterioration mechanisms except

- A. Fatigue
- B. Stress/creep rupture
- C. Tensile overload
- D. Intergranular corrosion

Answer: D

Question: 3

Depending on the methodology employed in qualitative analysis, the categories may be described with words such as

- A. High, medium or low or may have numerical descriptors.
- B. High, medium or low only
- C. Numerical descriptors only

Answer: A

Question: 4

When in accurate or insufficient failure data exists on the specific equipment item for quantitative probability of failure analysis then

- A. General industry, company or manufacturer failure data used
- B. Process hazard analysis failure data may be used
- C. Process and toxic concentration analysis may be used

Answer: A

Question: 5

Deterioration rates can be expressed in terms of

- A. Corrosion rates for thinning or susceptibility for mechanisms where deterioration rate is unknown
- B. Corrosion rates for thinning only
- C. Immeasurable quantity
- D. Discrete numbers
- E. Susceptible rates only

Answer: A

Question: 6

Damage mechanisms where deterioration rates are immeasurable or unknown are

- A. Stress corrosion cracking
- B. Hydrogen induced cracking
- C. Thinning
- D. All of the above
- E. Both a and b

Answer: E

Question: 7

The ability to state the rate of deterioration precisely is affected by the following except

- A. By equipment complexity
- B. Type of deterioration mechanism, process and metallurgical variations
- C. Inaccessibility for inspection, limitations of inspection and test methods
- D. Lack of coverage of an area subject to deterioration
- E. None of the above

Answer: C

Question: 8

The type of failure mode that likely to occur due to pitting

- A. Small hole sized leaks
- B. Small holes to ruptures
- C. Cracks
- D. Catastrophic rupture

Answer: A

Question: 9

The type of failure mode that likely to occur due to ssc

- A. Small holes to rupture
- B. Small holes
- C. Cracks
- D. Only rupture

Answer: C

Question: 10

The type of failure mode that likely to occur due to mechanical and metallurgical deterioration

- A. Small holes to ruptures
- B. Cracks
- C. Catastrophic ruptures
- D. Leaks

Answer: C

Question: 11

The type of failure mode that likely to occur due thinning

- A. Larger leaks or rupture
- B. Only rupture
- C. Metal loss
- D. Cracks

Answer: A

Question: 12

If a very aggressive acid is carried over from a corrosion resistant part of a system into a downstream vessel that is made of carbon steel, the result would be

- A. Rapid corrosion could result in failure in a few hours or days.
- B. General corrosion over a period of time could result in metal loss
- C. No deterioration will take place since carbon steel is resistant to aggressive acid

Answer: A

Question: 13

If multiple inspections have been performed, which inspection may best reflect current operating conditions?

- A. Most recent inspection
- B. Base line inspection survey
- C. Process conditions
- D. Corrosion survey

Answer: A

Question: 14

Probability side of the risk equation is normally managed by

- A. Plant inspectors or inspection engineers
- B. Maintenance planning engineers
- C. Process safety personnel
- D. Both a and b

Answer: A

Question: 15

Other functional failures are usually covered within

- A. Rbi
- B. Rcm

C. Pha
D. Hazop

Answer: B