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Unit 5 - Week 3 :

Register for Certification exam

Course outline

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- Lecture 12 : Corrosion-I
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Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment. **Due on 2019-02-20, 23:59 IST.**

1) Corrosion is a surface initiated degradation of material due to *1 point*

- a. Chemical/electrochemical interaction with environment
- b. Mechanical Interaction with environment
- c. Failure due to excessive compressive loading
- d. Failure due to excessive tensile loading

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Chemical/electrochemical interaction with environment

2) Which one of the following is not an example of corrosion? *1 point*

- a. Rusting of Iron
- b. Tarnishing of Silver
- c. High temperature oxidation of Inconel
- d. Removal of grease by water jet

No, the answer is incorrect.
Score: 0

Accepted Answers:
d. Removal of grease by water jet

3) Which of the following is the most stable state of metal: *1 point*

- a. Pure metal
- b. Alloy
- c. Metal Ion
- d. Metal oxide

a. Pitting corrosion
b. Galvanic corrosion
c. High temperature oxidation
d. Crevice corrosion

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Pitting corrosion

5) Corrosion rate is usually expressed as: ***1 point***

a. Mils per year
b. Kelvin per second
c Centimeter per second square
d. Grams per centimeter

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Mils per year

6) Arrange the following metals in order of increasing chemical reactivity: Gold, Copper, Aluminium, Magnesium ***1 point***

a. Gold, Copper, Aluminium, Magnesium
b. Gold, Aluminium, Copper, Magnesium
c. Gold,Copper Aluminium, Magnesium
d. Aluminium, Magnesium, Gold, Copper

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Gold, Copper, Aluminium, Magnesium

7) Which of the following alloy combinations has the minimum probability of galvanic corrosion in sea water: ***1 point***

a. Cast iron and steel
b. Inconel and steel
c. Silver and cast iron
d. Hastelloy C and steel

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Cast iron and steel

8) In which of the following case the probability of galvanic corrosion is the minimum: ***1 point***

a. Electrically connected hot and cold mild steel plates
b. Electrically connected cold worked and annealed mild steel combination
c. A steel pipe with larger area connected to titanium sheet with smaller area in marine environment
d. A steel pipe with smaller area connected to titanium sheet with larger area in marine environment

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. A steel pipe with larger area connected to titanium sheet with smaller area in marine environment

9) Galvanizing is an example of: ***1 point***

- a. Barrier coating and cathodic protection
- b. Barrier coating
- c. Anodic protection
- d. Passivation

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Barrier coating and cathodic protection

10 $M \rightarrow M^{++} + 2e^-$ is an example of: ***1 point***

- a. Oxidation
- b. Reduction
- c. Redox reaction
- d. Dissolution

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Oxidation

11) The initiation mechanism of pitting corrosion is: ***1 point***

- a. Bleaching of the oxide film from the surface and associated galvanic attack
- b. Oxide formation on the surface
- c. Dissolution of metal from the surface
- d. Spallation of oxide from the surface

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Bleaching of the oxide film from the surface and associated galvanic attack

12) Filiform corrosion is usually observed on ***1 point***

- a. Organic painted surface in humid environment
- b. Organic painted steel in dry environment
- c. Galvanized steel in humid environment
- d. Chromium plated steel in humid environment

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Organic painted surface in humid environment

13) Which one of the following alloying element increases the pitting corrosion resistance of steel? ***1 point***

- a. Sulphur

b. Carbon

c. Silicon

d. Nitrogen

No, the answer is incorrect.
Score: 0

Accepted Answers:
d. Nitrogen

14) Weld decay in AISI 304 stainless steel (SS) is an example of: ***1 point***

a. Pitting corrosion

b. High temperature oxidation

c. Integranular corrosion

d. Crevice corrosion

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. Integranular corrosion

15) Knife line attack is usually observed in ***1 point***

a. Heat affected zone of arc welded 304 Stainless Steel

b. In weld zone of arc welded AISI 304 Stainless Steel

c. At the interface between weld zone and base metal of stabilized AISI 304 Stainless Steel of after arc melting

d. Stabilized AISI 304 Stainless Steel

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. At the interface between weld zone and base metal of stabilized AISI 304 Stainless Steel of after arc melting

16) Dezincification is an example of ***1 point***

a. Pitting Corrosion of Brass

b. General corrosion of Brass

c. Selective leaching of Brass

d. Crevice corrosion of Brass

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. Selective leaching of Brass

17) Stress corrosion cracking occurs ***1 point***

a. At a stress higher than ultimate tensile strength

b. Due to combined action of tensile stress and specific corrosion medium

c. Cracking due to application of high stress

d. Due presence of fluctuating temperature of corrosive medium

No, the answer is incorrect.
Score: 0

Accepted Answers:

b. Due to combined action of tensile stress and specific corrosion medium

18) Which of the following is the consequence of hydrogen embrittlement ? ***1 point***

- a. Blistering
- b. Pitting
- c. Catastrophic failure
- d. Progressive loss of metal from the surface

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Blistering

19) Stainless steel is safe to use in which environment? ***1 point***

- a. Hydrochloric acid
- b. Sulfuric acid
- c. Hydrofluoric acid
- d. Nitric acid

No, the answer is incorrect.
Score: 0

Accepted Answers:
d. Nitric acid

20) Atmospheric corrosion resistance of plain carbon steel may be improved by ***1 point***

- a. Organic painting
- b. Application of thermal barrier coating
- c. Laser cladding of stainless steel
- d. Nitriding

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Organic painting

21) Pilling-Bedworth ratio may be defined as the: ***1 point***

- a. Ratio of the volume of the metal oxide to the volume of the metal (from which the oxide is created)
- b. Ratio of volume of the metal forming the oxide to the volume of oxide
- c. Total mass of oxide formed on the surface
- d. Percentage of metal participated in oxidation reaction

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Ratio of the volume of the metal oxide to the volume of the metal (from which the oxide is created)

22) The relative oxidation probability of metal and alloy may be predicted from ***1 point***

- a. Ellingham diagram
- b. Pourbaix Diagram
- c. EMF Series
- d. Galvanic Series

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Ellingham diagram

23) High temperature oxidation resistance of steel may be improved by **1 point**

- a. Surface alloying with magnesium
- b. Surface alloying with aluminium
- c. Surface alloying with nickel
- d. Surface alloying with cobalt

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Surface alloying with aluminium

24) The maximum operating temperature of chromium alloyed metal in high temperature oxidation resistance application is: **1 point**

- a. 400^{o}C
- b. 600^{o}C
- c. 900^{o}C
- d. 1600^{o}C

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. 900^{o}C

25) Thermal barrier coating may be applied for protection against **1 point**

- a. High temperature oxidation
- b. High temperature creep
- c. Room temperature wear
- d. Room temperature aqueous corrosion

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. High temperature oxidation

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