PAPER CODE:5008

M.Sc. Sem. III Examination
July-Sep-2021
Chemistry (Inorganic)
Paper: III CHNN -603 (II) [Old Course]

કુલ સમય :– ૬૦ મીનીટ કુલ પ્રશ્નો : ૫૦ વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1.The reciprocal of resistivity is _____

(A) Conductance (B) Resistance (C) Conductivity (D) Impedance

2.Which of the metal if present will make the alloy ferrous?

(A)Aluminum (B) Lead (C) Zinc (D) Iron

3.Thermal circuit breaker has _____

(A) Delayed trip action (B) Instantaneous trip action (C) Both of the above (D) none of the above

4. **Which of the following are the destructive effect of corrosion ?**

(A) Contamination of product (B) Effect on safety

(C) Reliability (D) Contamination of product , effect on safety and realizability

5.Factors on which soil resistance depends _____ ?

(A) Depth of the electrode (B) Nacl. (C) Moisture (D) All the above

6.Which of these is not a way to prevent intergranular corrosion ?

(A) Reduction of carbon level (B) Quenching (C) Reduction of alloying elements (D) Addition of carbide forming elements

7.over voltage protection is recommended for _____ ?

(A) Hydro – electric generators (B) Steam turbine generators

(C) Gas turbine generator (D) All of the above

8.Main form of ceramic degradation is _____

(A) Dissolution. (B) Swelling (C) Weathering. (D) Dissolution and swelling

9.What is the nature of fatigue fracture?

(A) Brittle fracture (B) Cup and cone fracture (C) Tensile fracture (D) Brittle and tensile fracture

10.Which of this metals does not require alloying for oxidation resistance ?

(A) Iron. (B) Aluminium (C) Molybdenum. (D) Copper

11.The direction in which the electric vertors oscillate in a polarized wave is called as _____

(A) Pass axis (B) plane of polarization (C) Propagating axis (D) polarizing axis

12.Which of the following tragediesthat occurred due to corrosion?

(A) Bhopal tragedy (B) Both bhopal tragedy and crude oil leak in canada

(C) Fukushima (D) Crude oil leak in canada

13.portable water pipelines of lead are replaced by various type of steeels, due to_____

(A) cheater cost (B) Shiny appearance (C) Contamination caused by lead (D) More availability

14.Which of the following is the factors that influence corrosion fatigue ?

(A) Type of metal (B) Composition of corrosive solution

(C) Temperature (D) Type of metal , corrosive solution composition, and temperature

15.Which of these materials is not added to iron for improving its oxidation resistance ?

(A) Nickel. (B) Chromium (C) Silicon (D) Aluminum

16.Polarization refers to the

(A) Prevention of electricity flowing in the electrolyte solution (B) Electricity flowing in the electrolyte solution

(C) Rapid dissolving of magnesium jn conc.Acid (D) None of these

17.Which of the following form of corrosion is more destructive and insidious in nature ?

(A) Uniform corrosion (B) Pitting corrosion (C) Galvanic corrosion (D) Intergranular corrosion

18.which of the following is/are the facts that indicate the reduction in fatigue resistance of metal ?

(A) Corrosion pits act as stress raisers (B) Corrosion pits act as a stress raiser and initiate cracks

(C) Corrosion pits neither act as stress raiser nor initiate cracks (D) Corrosion pits act as initiate cracks

19. Which two scientists present the first format presentation on maxied potential theory ?

(A) Wilsmore and Nernst (B) Traud and Nernst (C) Wagner and Traud (D) Wagner and Evans

20.in a dry cell the polarization is prevented through _____

(A) Potassium hydroxide mixture (B) Ammonium nitrate mixture

(C) Manganese oxide (D) Sodium hydroxide mixture

21.which of the following corrosion from is / are autocatalytic in nature ?

(A) Pitting and crevice corrosion (B) Crevice corrosion only

(C) Pitting corrosion only (D) Pitting and intergranular corrosion

22.Water is mainly used in boilers for the generation of ____

(A) Power. (B) Electricity (C) Steam. (D) Current

23. Which of the following corrosion contaminant will act as a protective layer ?

(A) Agcl. (B) Nacl. (C) Cao. (D) Sncl

24.Polarization occurs due to ____

(A) Rapid dissolving of magnesium in dilute acid (B) Slow dissolving of magnesium in conc.acid

(C) Copper electrode gets covered with bubbles of hydrogen gas

(D) Copper electrode gets covered with bubbles of ammonia gas

25.which of the following is / are the difference between the crevice and pitting corrosion ?

(A) Autocatalytic nature (B) Corrosion mechanism (C) both A and B (D) Initiation method

26.which of the following is not a result of the excess of impurity in boiler feed ?

(A) Scale and sludge formation (B) Decomposition (C) Corrosion , primo and foaming (D) Caustic embrittlement

27.What is the mechanism of dry corrosion ?

(A) Absorption (B) Electrochemical (C) Differential solubility (D) Both electrochemical and differential solubility

28.Un polarization positive side attracts the

(A) negative side of the water molecules (B) Positive side of the water molecules

(C) Substance dissolving completely in water (D) Nine of above

29.which of the following corrosion test is most reliable to know the extent of pitting corrosion ?

(A) To measure the average depth of pits (B) To measure the maximum depth of a pits

(C) Weight loss method (D) Weight gain method

30.If the precipitate formed is soft, loose and silky, these are _____ and if the precipitate is hard and adhering on the inner wall, it os called _____

(A) Sludge, scale. (B) Scale, sludge (C) Sludge , rodent. (D) Scale, rodent

31.Which theory explain the oxidation of metals ?

(A) Collision theory (B) Molecular orbital theory (C) Wagners theory (D) none of these

32.Atmospheric corrosion of metals result from their_____ ?

(A) Slow oxidation (B) Fast oxidation (C) Slow dehydration (D) Fast dehydration

33.Which of the following diagram shows the stability of metals over a range of pH and potential of a system ?

(A) Phase diagram (B) Pourbaix diagram (C)Phase diagram and pourbaix diagram (D) Colling curves

34.The propulsion of water into steam drum by extremely rapid almost explosive boiling of water at the heating surface is called _____

(A) Foaming. (B) Priming (C) Corrosion (D) Caustic embrittlement

35.If a metal undergoes uniform corrosion it becomes _____

(A) Thicker (B) Perforated (C) Thinner (D) Thicker and thinner

36.Which of the following alloying elements increase resistance of steel to atmospheric corrosion ?

(A) Coppe. (B) Nickel (C)Chromium. (D) All of above

37.Which of the following metals are widely used for atmospheric applications ?

(A) Copper and lead (B) Copper, lead,aluminum, galvanized steel

(C) Galvanized steel only (D) Galvanized steel and copper

38.Which of the following does not promote the differential aeration corrosion ?

(A) Accumulation of dirt (B) Partially covering metals (C)Wire fence kind of structure (D) Accumulation of oxygen

39.In boilers the feed water treatment is done mainly for removing _____

(A) Corrosion (B) Scale formation (C) Caustic embrittlement (D) All of these

40.Which of the following is an example of corrosion ?

(A) Rusting of iron (B) Tarnishing of silver (C) Liquefaction of ammonia (D) Rusting of iron and tarnishing of silver

41.Which of the following is / are the typical sacrificial anodes ?

(A) Magnesium (B) zinc (C) Aluminum- tin (D) All of above

42.Which of the following is /are the classification of atmosphere regarding atmospheric corrosion ?

(A) Industrial (B) Marial (C)Rural. (D) All of above

43.Which of the following does not promote the differential aeration corrosion ?

(A) Accumulation of oxygen (B) Accumulation of dirt (C) Wire fence kind of structure (D) Partially covering metals

44.Which of the following is not a result of the excess of impurity in boiler – feed ?

(A) Scale and sludge formation (B) Decomposition (C) Caustic embrittlement (D) all of above

45.Which of the metallic structure will require more impressed current density for cathodic protection ?

(A) Water heaters in hot freshwater (B) Underground pipelines

(C) The storage tank of H2So4 (D) Non of these

46.Where does corrosion occurs in the rusting of iron ?

(A) At cathode (B) At anode (C) In electrolytic solution (D) Outside the solution

47.Corrosion fatigue is a combined effect of _____

(A) Corrosive environment (B) Cyclic loading and corrosion

(C) Velocity and mechanical stresses (D) None of these

48.Ground resistance should be designed such that _____ ?

(A) Grounding resistance should be as low as possible (B) Grounding resistance should be as high as possible

(C) Grounding resistance should be always zero (D)None of these

49.Moisture content in the soil _____ the earth soil resistance ?

(A) Increase (B)Decrease (C) Does not affect (D) None of the above

50.Extent of corrosion in the underground metal work depends upon _____ ?

(A) Amount of moisture (B) Type of metal (C) Type of soil chemical (D) All of above