

## FINAL ANSWER KEY

Question 114/2024/OL

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Code:

Exam: Junior Instructor (Electroplater)

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Department Industrial Training

Question1:-Which electrical quantity cannot be measured with a voltmeter ?

A:-voltage

B:-potential difference

C:-terminal voltage

D:-EMF

Correct Answer:- Option-D

Question2:-Which effect of electrical current is applied in fan ?

A:-heating

B:-magnetic

C:-chemical

D:-gas ionisation

Correct Answer:- Option-B

Question3:-Which electrical quantity will be the same at any point of the series circuit ?

A:-voltage

B:-current

C:-resistance

D:-power

Correct Answer:- Option-B

Question4:-Which one is the source of ac supply ?

A:-cell

B:-battery

C:-DC generator

D:-alternator

Correct Answer:- Option-D

Question5:-What is the value of conductance, if a wire has resistance of  $R \Omega$  ?

A:-R

B:-1/R

C:-2R

D:-R/2

Correct Answer:- Option-B

Question6:-What is the Quantity of electricity transferred by one ampere current in one second ?

A:-one volt

B:-one watt

C:-one coulomb

D:-one joule

Correct Answer:- Option-C

Question7:-Which material permit electrones to move through it easily ?

A:-eureka

B:-silicon

C:-air

D:-mica

Correct Answer:- Option-A

Question8:-What is the effect of the parallel circuit with one branch open ?

A:-Whole circuit will not function

B:-Voltage increases in that branch

C:-Current will be the same

D:-No current will flow in that branch

Correct Answer:- Option-D

Question9:-How many electrons are there in the valance shell of the aluminium atom ?

A:-1

B:-4

C:-3

D:-2

Correct Answer:- Option-C

Question10:-Ohm's law shows the relation between

A:-current, voltage, power

B:-current, voltage, resistance

C:-conductance, voltage, resistance

D:-current, emf, voltage

Correct Answer:- Option-B

Question11:-Which of the following is not a homogenous mixture ?

A:-Air

B:-Mixture of salt and sugar

C:-Brass

D:-Solution of salt in water

Correct Answer:- Option-B

Question12:-The number of neutrons present in  $^{11}_5\text{B}$  is

A:-6

B:-8

C:-9

D:-5

Correct Answer:- Option-A

Question13:-Which of the following ions is isoelectronic with Oxide ion ( $\text{O}^{2-}$ ) ?

A:- $\text{Cl}^-$

B:- $\text{Ca}^{2+}$

C:- $\text{H}^+$

D:- $\text{N}^{3-}$

Correct Answer:- Option-D

Question14:-Permutit used for the treatment of hard water is chemically called

A:-Sodium Hydrogen Carbonate

B:-Hydrated Sodium Aluminium Silicate

C:-Sodium Carbonate

D:-Hydrated Calcium Aluminium Silicate

Correct Answer:- Option-B

Question15:-The pH value of 0.01 M KOH solution is

A:-2

B:-12

C:-11

D:-4

Correct Answer:- Option-B

Question16:-The transition metal which is present in Vitamin B12 is

A:-Magnesium

B:-Calcium

C:-Cobalt

D:-Iron

Correct Answer:- Option-C

Question17:-Bronze is an alloy of

A:-Copper and Zinc

B:-Copper and Silver

C:-Silver and Tin

D:-Copper and Tin

Correct Answer:- Option-D

Question18:-According to Bohr Model, the expression for angular momentum of an electron in a given stationary state is

A:- $mvr = n\frac{h}{2\pi}$

B:- $mvr = n\frac{h}{\pi^2}$

C:- $mvr = n\frac{h}{4\pi}$

D:- $mvr = n\frac{h}{\pi}$

Correct Answer:- Option-A

Question19:-Extraction of which of the following metals involves Bessemerisation

A:-Al

B:-Cu

C:-Ag

D:-Zn

Correct Answer:- Option-B

Question20:-Example of a solution showing negative deviation from Raoult's law is

A:-Acetone and Carbon disulphide

B:-Acetone and Benzene

C:-Acetone and Chloroform

D:-Acetone and Ethanol

Correct Answer:- Option-C

Question21:-Which of the following represents a practical application of electrolysis ?

A:-Heating water to produce steam in a boiler

B:-Generating electricity in a solar panel

C:-Purifying copper ore in a blast furnace

D:-Extracting hydrogen from water for fuel usage

Correct Answer:- Option-D

Question22:-What is the byproduct in a hydrogen-oxygen fuel cell combustion ?

A:-Hydrogen

B:-Oxygen

C:-Water

D:-None of the above

Correct Answer:- Option-C

Question23:-What happens when the opposing external applied potential to an electrochemical cell is greater than the cell potential

A:-The electrochemical cell stops functioning

B:-The electrochemical cell behaves like an electrolytic cell

C:-Only reduction reactions occur in the cell

D:-Only oxidation reactions occur in the cell

Correct Answer:- Option-B

Question24:-Calculate the quantity of aluminium metal deposited by passing 1.5 faradays of electricity through an aqueous solution of  $AlCl_3$

A:-13.5g

B:-27g

C:-40.5g

D:-1.35g

Correct Answer:- Option-A

Question25:-The electrolyte used in Leclanche cell

A:-A paste of KOH and ZnO

B:-38% solution of sulphuric acid

C:-Moist sodium hydroxide

D:-Moist paste of  $NH_4Cl$  and  $ZnCl_2$

Correct Answer:- Option-D

Question26:-Pick out the weak electrolytes from the following

i)  $CH_3COONa$

ii)  $NH_4OH$

iii)  $NH_4Cl$

iv)  $CH_3COOH$

A:-i and ii

B:-i and iii

C:-ii and iii

D:-ii and iv

Correct Answer:- Option-D

Question27:-The product formed at the cathode during the electrolysis of molten sodium chloride

A:-Chlorine gas

B:-Sodium metal

C:-Hydrogen gas

D:-Oxygen gas

Correct Answer:- Option-B

Question28:-In a parallel arrangement, two batteries with EMFs of 2V and 1V and internal resistance of  $1\Omega$  and  $2\Omega$  respectively, are connected. What is the effective EMF of the combination ?

A:-3/5V

B:-3/2V

C:-5/3V

D:-2V

Correct Answer:- Option-C

Question29:-Calculate the amount of charge flowing in 2 min in a wire of resistance  $10\Omega$  when a potential difference of 20V is applied between its ends

A:-120C

B:-240C

C:-20C

D:-4C

Correct Answer:- Option-B

Question30:-Energy change occurring in an electrolytic cell is

A:-Chemical energy to electrical energy

B:-Electrical energy to chemical energy

C:-Chemical energy to heat energy

D:-None of the above

Correct Answer:- Option-B

Question31:-Factors which affecting the atmospheric corrosion

i) Oxidising action of air.

ii) Humidity condition and atmospheric pollution.

iii) Salt in marine atmosphere.

A:-Only (ii and iii)

B:-Only (i and ii)

C:-All of the above (i, ii and iii)

D:-Only (iii)

Correct Answer:- Option-C

Question32:-The corrosion of metals can be effectively resisted by

i) Application of metallic coatings.

ii) Application of acids.

iii) Application of paints.

A:-Only (i and iii)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-A

Question33:-A discontinuity in protective surface film

A:-Inter granular corrosion

B:-Pitting corrosion

C:-Stress corrosion

D:-Bacterial corrosion

Correct Answer:- Option-B

Question34:-Cracking of light alloys

A:-Inter granular corrosion

B:-Pitting corrosion

C:-Stress corrosion

D:-Bacterial corrosion

Correct Answer:- Option-C

Question35:-The aluminium surface can be protected from corrosion by

A:-Pickling

B:-Colouring

C:-Dyeing

D:-Anodising

Correct Answer:- Option-D

Question36:-The corrosion caused by moving liquids

A:-Filiform corrosion

B:-Fretting corrosion

C:-Corrosion fatigue

D:-Erosion corrosion

Correct Answer:- Option-D

Question37:-The coating of zinc metal on iron surface for the protection from corrosion

A:-Parkerising

B:-Galvanising

C:-Dyeing

D:-Anodising

Correct Answer:- Option-B

Question38:-In which corrosion a growth of crack formation in a corrosive environment on ferrous metal ?

A:-Inter granular corrosion

B:-Pitting corrosion

C:-Stress corrosion

D:-Bacterial corrosion

Correct Answer:- Option-C

Question39:-Which of the following chemical used for the removal of corrosion in aluminium metal ?

A:-Sodium hydroxide

B:-Hydrochloric acid

C:-Nitric acid

D:-Aquaregia

Correct Answer:- Option-A

Question40:-Why aluminium oxide on the surface of aluminium useful for the aluminium metal ?

A:-It helps the oxidation process of aluminium

B:-It helps the formation of new aluminum metal

C:-It protects the aluminium oxide film

D:-It protects further deterioration of the aluminium metal

Correct Answer:- Option-D

Question41:-Mild steel immersion heaters are used for heating electroplating solutions

i) Cyanide solutions

ii) Alkaline solutions

iii) Phosphoric and chromic acid solutions

A:-Only (i and iii)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-B

Question42:-Chrofiles are used to float the plating solution for

i) Improve throwing power

ii) Reduce spray

iii) Prevent heat losses

A:-Only (i and iii)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-All of the above (i, ii and iii)

Correct Answer:- Option-C

Question43:-In plating solution cooling purpose is required

i) Operated at high current densities

ii) Operated at high temperature

iii) Operated at low temperature



A:-Only (i)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-Only (iii)

Correct Answer:- Option-B

Question44:-What is the reason for the proposal of air agitation units in plating bath ?

i) Keep the solution well mixed

ii) Prevent the production of rough or burnt deposit

iii) Increase the metal content

A:-Only (i and iii)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-Only (iii)

Correct Answer:- Option-B

Question45:-Where it is recommended to use filter units to plating bath ?

i) Roughness of deposit due to inclusion of suspended matters

ii) Roughness of deposit due to high metallic content

iii) Roughness of deposit due to high current density

A:-Only (i)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-Only (iii)

Correct Answer:- Option-A

Question46:-The effective method for the rapid drying of small plated components in bulk ?

i) By the use of hot air oven

ii) By the use of hot water

iii) By the use of centrifugal dryer

A:-Only (i)

B:-Only (i and ii)

C:-Only (ii and iii)

D:-Only (iii)

Correct Answer:- Option-D

Question47:-The advantages of horizontal immersed perforated plating barrels

i) Easily provided with automatic loading and unloading facilities.

ii) Easily taken from pre-plating, plating and post plating treatments.

iii) Convenient for the plating of large quantity in bulk.

A:-Only (i)

B:-All of the above (i, ii and iii)

C:-Only (ii and iii)

D:-Only (iii)

Correct Answer:- Option-B

Question48:-The equipment in which the abrasive particles are made to impinge on the surface to be cleaned by compressed air ?

A:-Buffing

B:-Emery cutting

C:-Barrel cleaning

D:-Abrasive blast cleaning

Correct Answer:- Option-D

Question49:-Name of the cathode contact used in plating barrels consists of a length of heavy insulated flexible cable terminated with a steel cathode knob.

A:-Dummy

B:-Bus bar

C:-Danglers

D:-Jigs

Correct Answer:- Option-C

Question50:-Name of the instrument used to measure accurately the acidic or alkalinity of a solution

A:-pH meter

B:-Hydrometer

C:-Lactometer

D:-Thermometer

Correct Answer:- Option-A

Question51:-Which solution is used for pickling of non-ferrous metals ?

A:-Sulphuric acid solution

B:-Hydro fluoric acid solution

C:-Nitric acid solution

D:-Hydro chloric acid solution

Correct Answer:- Option-B

Question52:-What is a buffing process ?

A:-Coating

B:-Free-cleaning

C:-Mechanical cleaning

D:-Ionising

Correct Answer:- Option-C

Question53:-Which is the process included in the pre-treatment process ?

A:-Backing

B:-Degreasing and Pickling

C:-Polishing and buffing

D:-Passivation

Correct Answer:- Option-B

Question54:-What is the removal of maskant on the areas to be etched ?

A:-Demasking

B:-Etching

C:-Masking

D:-Scribing

Correct Answer:- Option-A

Question55:-What is the mixture of concentrated nitric acid and same concentration of hydrochloric acid and is used for dissolving metals ?

A:-Oil of vitriol

B:-Schiff's reagent

C:-Aqua regia

D:-Grignard reagent

Correct Answer:- Option-C

Question56:-Which component is essential in an automatic barrel plating plant for holding the parts ?

A:-Rack

B:-Basket

C:-Barrel

D:-Conveyor

Correct Answer:- Option-C

Question57:-Which method provides quick and complete cleaning for parts to be plated or coated, saving time and ensure proper adhesion ?

A:-Soak cleaning

B:-Buffing

C:-Barel Polishing

D:-Ultrasonic cleaning

Correct Answer:- Option-D

Question58:-Which one of the following is an organic chemical ?

A:-Sodium Hydroxide

B:-Tri chloroethylene

C:-Zinc Sulphate

D:-Pottassium Permanganate

Correct Answer:- Option-B

Question59:-What is the first step in a chemical cleaning cycle employed for heavily contaminated items ?

A:-Solvent cleaning

B:-Vapour cleaning

C:-Ultrasonic cleaning

D:-Electrolytic cleaning

Correct Answer:- Option-A

Question60:-Which is the process in which the abrasive particles are made to impinge on the surface to be cleaned by compressed air ?

A:-Buffing

B:-Emery cutting

C:-Abrasive blast cleaning

D:-Barrel cleaning

Correct Answer:- Option-C

Question61:-Which chemical is used for wood's nickel strike process ?

A:-Nickel Chloride and Hydro chloric acid

B:-Nickel sulphate and Hydro chloric acid

C:-Nickel chloride and Sulphuric acid

D:-Nickel sulphate and Sulphuric acid

Correct Answer:- Option-A

Question62:-Which anodes are used for bright chromium plating ?

A:-Chromium anode

B:-Antimony lead anode

C:-Stainless steel anode

D:-Nickel anode

Correct Answer:- Option-B

Question63:-Which under coating is to be done before gold plating ?

A:-Chromium

B:-Nickel

C:-Cadmium

D:-Zinc

Correct Answer:- Option-B

Question64:-Which process removes Zinc cadmium and copper contamination on the nickel bath ?

A:-Filtration

B:-Activated carbons

C:-Plating off

D:-Agitation

Correct Answer:- Option-C

Question65:-Which type of plating involves the use of electrolytes containing copper cyanide and zinc cyanide ?

A:-Nickel plating

B:-Zinc plating

C:-Copper plating

D:-Brass plating

Correct Answer:- Option-D

Question66:-Which is the Latin word from which the symbol of Tin (Sn) is derived ?

A:-Aurum

B:-Stannum

C:-Argentum

D:-Cuprum

Correct Answer:- Option-B

Question67:-What are the chemical contains in electrolyte used for bright nickel plating ?

A:-Nickel chloride, Boric acid and Ammonium sulphate

B:-Nickel sulphate, Nickel chloride, Boric acid

C:-Dilute sulphuric acid, Hydro chloric acid and Nickel chloride

D:-Nickel sulphate, Sulphuric acid and Ammonium sulphate

Correct Answer:- Option-B

Question68:-Which is used as the main electrolytic ingredient in Trivalent chromium plating ?

A:-Chromium Sulphate

B:-Sulphuric acid

C:-Chromium Oxide

D:-Phosphoric acid

Correct Answer:- Option-A

Question69:-Which is the cathode efficiency of alkaline Tin plating solution ?

A:-98 to 100%

B:-70 to 80%

C:-45 to 60%

D:-90 to 95%

Correct Answer:-**Question Cancelled**

Question70:-Which plating can be used in food packages ?

A:-Zinc plating

B:-Tin plating

C:-Cadmium plating

D:-Brass plating

Correct Answer:- Option-B

Question71:-Which acid is silver not resistant to ?

A:-Sulphuric acid

B:-Nitric acid

C:-Citric acid

D:-HCL acid

Correct Answer:- Option-B

Question72:-What is necessary to keep the plating solution well mixed in order to prevent variation in concentration and temperature ?

A:-Agitation

B:-Degreasing

C:-Filtration

D:-Pickling

Correct Answer:- Option-A

Question73:-Which chemical should be added in cyanide copper plating bath if the pH is too low ?

A:-Hydrochloric acid

B:-Acetic acid

C:-Sodium Hydroxide

D:-Sodium cyanide

Correct Answer:- Option-C

Question74:-What is the possible cause for the deposited blistered or stripping from the basis metal while doing bright chromium plating ?

A:-Good adhesion of the undercoat nickel deposit

B:-Poor adhesion of the undercoat nickel deposit

C:-Poor adhesion of the undercoat chromium deposit

D:-Good adhesion of the undercoat chromium deposit

Correct Answer:- Option-B

Question75:-What is the possible cause of hard and dull deposit in silver plating ?

A:-Too low current density

B:-High current density

C:-Too low temperature

D:-High temperature

Correct Answer:- Option-A

Question76:-Which process is used for preventing discolouration after cadmium plating ?

A:-Activation

B:-Phosphating

C:-Passivation

D:-Coating

Correct Answer:- Option-C

Question77:-Which solution is used to test for porosity of cadmium and zinc coating ?

A:-3% volume of hydrochloride acid solution

B:-2% volume of hydrochloric acid solution

C:-4% volume of hydrochloric acid solution

D:-1% volume of hydrochloric acid solution

Correct Answer:- Option-D

Question78:-Which defect occurs due to inefficient contacts of articles in bright chromium plating ?

A:-Dull, grey, rough deposit

B:-Brown stains on deposit

C:-Blistered deposits

D:-Little chromium deposit on the article

Correct Answer:- Option-B

Question79:-Which is used in plating solutions as complexing agent particularly in gold and silver plating ?

A:-Buffer

B:-Cyanide

C:-Source of metal

D:-Brightner

Correct Answer:- Option-B

Question80:-What one of the following offers excellent solderability, as well as superior protection against corrosion ?

A:-Steel

B:-Zinc

C:-Copper

D:-Tin

Correct Answer:- Option-D

Question81:-What is the chemical formula of aluminum ?

A:-Al

B:-AM

C:-Ag

D:-Au

Correct Answer:- Option-A

Question82:-Which process is used to prevent corrosion of Aluminum ?

A:-Stripping

B:-Blackening

C:-Degreasing

D:-Anodising

Correct Answer:- Option-D

Question83:-The coating formed by anodising of aluminium by sulphuric acid process mainly consists of

A:-Hydroxide of Aluminium

B:-Oxide of Aluminium

C:-Sulphate of Aluminium

D:-Carbonate of Aluminium

Correct Answer:- Option-B

Question84:-Anodising of the following metal is not possible ?

A:-Titanium

B:-Aluminium

C:-Magnesium

D:-Iron

Correct Answer:- Option-D

Question85:-\_\_\_\_\_ is normally used for sealing of anodised Aluminium ?

A:-Nickel Chloride

B:-Hydrochloric Acid

C:-Nickel Acetate

D:-Sulphuric Acid

Correct Answer:- Option-C

Question86:-Which of the following solution is not suitable for anodising of aluminium ?

A:-Hydrochloric Acid

B:-Sulphuric Acid

C:-Chromic Acid

D:-Sulphuric Acid and Oxalic Acid



Correct Answer:- Option-A

Question87:-In anodising of Aluminium, dye is used \_\_\_\_\_ ?

A:-Before Anodising

B:-After Sealing

C:-In the anodising bath

D:-After anodising

Correct Answer:- Option-D

Question88:-For stripping of anodised film of aluminium, the following solution is used \_\_\_\_\_ ?

A:-Chromic acid and phosphoric acid

B:-Potassium dichromate

C:-Nitric acid and acetic acid

D:-Nickel acetate

Correct Answer:- Option-A

Question89:-Which process is followed for closing the pores in anodised films ?

A:-Passivation

B:-Buffing

C:-Sealing

D:-Tumbling

Correct Answer:- Option-C

Question90:-What is the process of applying colour to an anodised surface called ?

A:-Coating

B:-Dyeing

C:-Electroplating

D:-Printing

Correct Answer:- Option-B

Question91:-How will you increase the adhesion property of the base metal ?

A:-By Pretreatment

B:-By Increasing the size of bath

C:-By passing more current

D:-By improving pH value of the electrolyte

Correct Answer:- Option-A

Question92:-Which one of the following property is tested using BNF test ?

A:-Hardness

B:-Thickness of Electroplating deposit

C:-Flexibility

D:-Tempering

Correct Answer:- Option-B

Question93:-Salt spray test is used to determine the \_\_\_\_\_ of the metallic surface ?

A:-Hardness

B:-Corrosion resistance property

C:-Emissivity

D:-Wear resistance property

Correct Answer:- Option-B

Question94:-Tape Test is carried to measure the \_\_\_\_\_ of coating ?

A:-Thickness

B:-Purity

C:-Adhesion

D:-Emmissivity

Correct Answer:- Option-C

Question95:-Which type of measuring instrument from the following is used for measuring the thickness of deposit in the cylindrical job ?

A:-Micrometer

B:-Steel Rule

C:-Weighing Machine

D:-Measuring tape

Correct Answer:- Option-A

Question96:-Which method is used to measure the thickness of anodised film of aluminum ?

A:-Ultrasonic

B:-Eddy Current

C:-Magnetic

D:-None

Correct Answer:- Option-B

Question97:-The method used for determining the thickness of metallic coating by electro chemical stripping is known as \_\_\_\_\_ ?

A:-Corrodkote test

B:-Tape test

C:-Salt spray test

D:-Coulometric test

Correct Answer:- Option-D

Question98:-What is the use of salt spray test for plated article ?

A:-Adhesion

B:-Thickness

C:-Hardness

D:-Porosity

Correct Answer:- Option-D

Question99:-What is the common visual test used to determine cleanliness of the surface of parts ?

A:-Tape test

B:-Breakdown voltage test

C:-Water break test

D:-Salt spray test

Correct Answer:- Option-C

Question100:-Which corrosion resistance test is used to simulate the type of corrosion occur on Nickel Chromium coating ?

A:-Calcium test

B:-Corrodkote test

C:-Salt spray test

D:-Sulphur-di-oxide test

Correct Answer:- Option-B