PROVISIONAL ANSWER KEY

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Question1:-What is the electron configuration of copper atom ?

A:-2,8,8,1

B:-2,8,18,1

C:-2,8,8,18,1

D:-2,8,8,8,1

Correct Answer:- Option-B

Question2:-How many electrons pass through a conductor in one second having resistance of one ohm with a potential difference of one volt causes one ampere current passed through it ?

A:-624 × 10^{18}

B:-0.624 × 10^{18}

C:-6.24 × 10^{18}

D:-62.4 × 10^{18}

Correct Answer:- Option-C

Question3:-What is call the quantity of electricity transferred in one second by a current of one ampere ?

A:-AMPERE

B:-VOLT

C:-IMPEDANCE

D:-COULOMB

Correct Answer:- Option-D

Question4:-What is the coefficient of linear expansion of copper at 20°C ?

A:-17 × 10^{-6}

B:-17 × 10^{-7}

C:-1.7 × 10^{-6}

D:-0.17 × 10^{-6}

Correct Answer:- Option-A

Question5:-What is the tensile strength of Aluminum conductor in NW/mm² ?

A:-170

B:-70

C:-660

D:-2.7

Correct Answer:- Option-B

Question6:-What is the melting point of copper ?

A:-1803°C

B:-1683°C

C:-1083°C

D:-1883°C

Correct Answer:- Option-C

Question7:-What is the accuracy of a metric outside micrometer ?

A:-0.001 mm

B:-0.0001 mm

C:-1.01 mm

D:-0.01 mm

Correct Answer:- Option-D

Question8:-What is the total/effective resistance of a circuit having Three 3Ω resistance are connected in parallel ?

A:-1Ω

B:-3Ω

C:-1.5Ω

D:-9Ω

Correct Answer:- Option-A

Question9:-Which is the smallest unit of work done in CGS system ?

A:-Dyne

B:-Erg

C:-Joule

D:-Gram

Correct Answer:- Option-B

Question10:-Which name the power that occurs inside the motor ?

A:-Internal Horse Power

B:-Brake Horse Power

C:-Indicated Horse Power

D:-Metric Horse Power

Correct Answer:- Option-C

Question11:-The number of neutrons in $^{81}_{35}Br$ is

A:-35

B:-81

C:-46

D:-116

Correct Answer:- Option-C

Question12:-Which of the following represents the correct order of decreasing metallic characters for elements Si, Be, Mg, Na and P ?

A:-Na > Be > Mg > P > Si

B:-Na > Mg > Be > P > Si

C:-Na > Be > P > Mg > Si

D:-Na > Mg > Be > Si > P

Correct Answer:- Option-D

Question13:-The pH of 0.01 M HCl aqueous solution is

A:-0

B:-2

C:-3

D:-10

Correct Answer:- Option-B

Question14:-The hydrolysis product of which among the following salts will have acidic behaviour

A:-NaCl

B:-Na_2CO_3

C:-CH_3COONa

D:-NH_4Cl

Correct Answer:- Option-D

Question15:-Which among the following is not a scale of electronegativity of elements ?

A:-Pauling scale

B:-Jefferson scale

C:-Allred - Rochow scale

D:-Mulliken - Jaffe scale

Correct Answer:- Option-B

Question16:-Predict the formula of the stable binary compound formed by the combination of beryllium and hydrogen.

A:-BeH_2

B:-BeH

C:-Be_2H

D:-Be_2H_2

Correct Answer:- Option-A

Question17:-The atomic number of Cr and Mn are 24 and 25 respectively. The electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5$ represents

A:-Cr^{3+}

B:-Cr^{+}

C:-Mn

D:-Mn^{+}

Correct Answer:- Option-B

Question18:-Hard water is softened by using calgon. Chemically calgon is

A:-$Na_3P_3O_9$

B:-$Na_4P_4O_{12}$

C:-$Na_4P_2O_7$

D:-$Na_6P_6O_{18}$

Correct Answer:- Option-D

Question19:-Which among the following is an example for a basic buffer solution ?

A:-$CH_3COOH + CH_3COONa$

B:-$CH_3CH_2COOH + CH_3COOK$

C:-CH_3COONH_4

D:-$NH_4OH + NH_4Cl$

Correct Answer:- Option-D

Question20:-Mathematical expression of Heisenberg's uncertainty principle for motion of microscopic objects is
(Where, Δx − uncertainty in position, ΔP_x − uncertainty in momentum, ΔV_x − uncertainty in velocity)

A:-Δx $\Delta P_x \geq \frac{h}{4\pi}$

B:-Δx $\Delta P_x \leq \frac{h}{4\pi}$

C:-Δx $\Delta V_x \geq \frac{h}{4\pi}$

D:-Δx $\Delta V_x \leq \frac{h}{4\pi}$

Correct Answer:- Option-A

Question21:-During electroplating the substance to be plated will act as

A:-Anode

B:-Electrolyte

C:-Cathode

D:-Anode and Electrolyte

Correct Answer:- Option-C

Question22:-Which of the following is a secondary cell ?

A:-Dry cell

B:-Mercury cell

C:-Button cell

D:-Lead storage battery

Correct Answer:- Option-D

Question23:-What is the potential of standard hydrogen electrode when it is coupled with $Cu^{2+}/$ Cu cell ?

A:-1V

B:-0V

C:-0.34V

D:-—0.76V

Correct Answer:- Option-B

Question24:-Which among the following is an electrolyte ?

A:-Solid NaCl

B:-Molten NaCl

C:-V_2O_5

D:-XeF_4

Correct Answer:- Option-B

Question25:-In an electrochemical cell which among the statement is correct ?
I. Oxidation occurs at the cathode
II. Reduction occurs at the cathode
III. Redox reaction occurs at the anode
IV. Oxidation occurs at the anode

A:-I and II

B:-I and III

C:-II only

D:-II and IV

Correct Answer:- Option-D

Question26:-What is the product obtained at cathode when aqueous NaCl is electrolysed ?

A:-H_2

B:-Na

C:-O_2

D:-Cl_2

Correct Answer:- Option-A

Question27:-One Faraday stands for

A:-Mass of one mole electrons

B:-Charge of one million electrons

C:-Charge of one mole electrons

D:-Mass of one million electrons

Correct Answer:- Option-C

Question28:-Who was first described the quantitative aspect of electrolysis ?

A:-Albert Einstein

B:-Michael Faraday

C:-Issac Newton

D:-J.J. Thomson

Correct Answer:- Option-B

Question29:-How much electricity is needed to deposit one mole of Aluminium ?

A:-1F

B:-2F

C:-3F

D:-4F

Correct Answer:- Option-C

Question30:-Electrochemical equivalent is

A:- $\frac{\text{Mass of substance deposited}}{\text{F}}$

B:- $\frac{\text{Equivalent weight}}{\text{Valency}}$

C:- $\frac{\text{Weight}}{\text{Equivalent weight}}$

D:-None of these

Correct Answer:- Option-A

Question31:-Which is the name of process that cleans the metal in acid to remove corrosion products from the surface ?

A:-Pickling

B:-Drying

C:-Degreasing

D:-Deburring

Correct Answer:- Option-A

Question32:-Which type of corrosion produces attack in the form of spots, pits on holes ?

A:-Galvanic corrosion

B:-Uniform corrosion

C:-Erosion corrosion

D:-Pitting corrosion

Correct Answer:- Option-D

Question33:-Which one of the following metal has high resistance to corrosion in sea shore area ?

A:-Silver

B:-Cadmium

C:-Nickel

D:-Chromium

Correct Answer:- Option-B

Question34:-Which plating have the special properties like high hardness, low co-efficient of friction, high resistance to corrosion and ability to withstand high temperature ?

A:-Cadmium

B:-Bright chromium

C:-Bright nickel

D:-Hard chromium

Correct Answer:- Option-D

Question35:-Which process is used to deposit one metal over another metal for protection against corrosion ?

A:-Electroplating

B:-Amalgamising

C:-Cathodic Protection

D:-Carbon treatment

Correct Answer:- Option-A

Question36:-Which one of the following coating is not used for decorative finishing ?

A:-Nickel plating

B:-Cadmium plating

C:-Gold plating

D:-Silver plating

Correct Answer:- Option-B

Question37:-Which process follows polishing in electroplating ?

A:-Drying

B:-Buffing

C:-Deburring

D:-De-Scaling

Correct Answer:- Option-B

Question38:-Which gas is normally liberated from the cathode of plating bath ?

A:-Oxygen

B:-Chlorine

C:-Hydrogen

D:-Carbon dioxide

Correct Answer:- Option-C

Question39:-What is "Stop-Off" in electroplating ?

A:-To add brightner

B:-To lower current density

C:-Masking applied where plating is not required

D:-To add water

Correct Answer:- Option-C

Question40:-What is the need of effluent treatment in electroplating ?

A:-Dispose Polluted water

B:-Dispose Unpolluted water

C:-Dispose Rain Water

D:-Dispose Well water

Correct Answer:- Option-A

Question41:-Which is the reason for using lining tank for electroplating ?

A:-For not reacting with chemicals

B:-For bath balancing

C:-For reacting with chemicals

D:-For cleaning

Correct Answer:- Option-A

Question42:-What is the purpose of lead lained heater used for chromium plating ?

A:-To increase Metal content

B:-To increase Bath cooling

C:-To increase Bath Temperature

D:-To increase pH

Correct Answer:- Option-C

Question43:-Which is the method for removing suspended matters from the zinc plating solution ?

A:-Filter the solution

B:-Heat the solution

C:-Reduce current density

D:-Reduce voltage

Correct Answer:- Option-A

Question44:-What is the name of the material used to reduce the loss of heat and evaporation in chromium plating bath ?

A:-Inhibitor

B:-Dummy cathode

C:-Anode bag

D:-Polypropylene chroffles

Correct Answer:- Option-D

Question45:-Which is the equipment extensively used for the final drying out of rack components to ensure rapid drying ?

A:-Hot air ovens

B:-Barrels

C:-Filter unit

D:-Bus bar

Correct Answer:- Option-A

Question46:-What is the main application of plating barrel ?

A:-Less production of wide variety of large articles

B:-Bulk production of wide verity of small articles

C:-For Anodising process

D:-For plating bath analysis

Correct Answer:- Option-B

Question47:-Which equipment is used in electroplating industry to converts alternating current to direct current ?

A:-Transformer

B:-Rheostat

C:-Potentiometer

D:-Rectifier

Correct Answer:- Option-D

Question48:-Which chemical is used for vapour degreasing ?

A:-Trichloroethylene

B:-Sodium carbonate

C:-Trisodium phosphate

D:-Sodium hydroxide

Correct Answer:- Option-A

Question49:-Which instrument is used to measure pH value quick and more accurately ?

A:-pH meter

B:-Universal indicator

C:-pH scale

D:-Indicator

Correct Answer:- Option-A

Question50:-_____ is a process in which cations or anions are captured from solutions, with the help of artificial polymeric resins, produce de-ionised water.

A:-Coagulation

B:-Ultraviolet radiation

C:-Ion exchange

D:-Reverse osmosis

Correct Answer:- Option-C

Question51:-Which is the common abrasive used for mechanical polishing ?

A:-Emery

B:-Dust

C:-Quartz

D:-Sand

Correct Answer:- Option-A

Question52:-Which mop is used for polishing the inside of cup shaped articles ?

A:-Solid felt wheel

B:-Leather wheel

C:-Bottom mop

D:-Stitched mop

Correct Answer:- Option-C

Question53:-Which treatment is used in sand blasting for the removal of sand from its surface ?

A:-Sulphuric acid pickling

B:-Chromic acid pickling

C:-Hydrochloric acid pickling

D:-Hydroflouric acid pickling

Correct Answer:- Option-D

Question54:-Which neutralizing dip is used to reduce rusting after the acid pickled steel parts ?

A:-Alkaline solution

B:-Acid solution

C:-Chromate solution

D:-Sulphate solution

Correct Answer:- Option-A

Question55:-Which is the name of the process that cleans the metal in acid to remove corrosion products from the surface ?

A:-Pickling

B:-Degreasing

C:-Deburring

D:-Drying

Correct Answer:- Option-A

Question56:-Which is used for additional polishing in barrel plating ?

A:-Fibre glass

B:-Saw dust

C:-Mica

D:-Leather pieces

Correct Answer:- Option-D

Question57:-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

Question58:-Which of the process includes degreasing and pickling ?

A:-Post Treatment

B:-Mechanical Treatment

C:-Pre Treatment

D:-Backing Treatment

Correct Answer:- Option-C

Question59:-Which cleaning process the cleaning action is generated by sound waves ?

A:-Hot soak cleaning

B:-Alkaline soak cleaning

C:-Ultrasonic cleaning

D:-Vapour degreasing

Correct Answer:- Option-C

Question60:-Which method of masking is suitable for masking process during hard chromium plating ?

A:-Cleaning

B:-Pickling

C:-Stop off lacquer

D:-De-Burring

Correct Answer:- Option-C

Question61:-What are the chemicals contained in electrolyte for copper plating in acid bath ?

A:-Copper sulphate and Sulphuric acid

B:-Chromic acid and Sulphuric acid

C:-Nitric acid and Sulphuric acid

D:-Oxalic acid and Sulphuric acid

Correct Answer:- Option-A

Question62:-Which is the function of boric acid in nickel plating ?

A:-Inhibitor

B:-Buffer

C:-Complexing agent

D:-Reduction agent

Correct Answer:- Option-B

Question63:-Which bath is generally used for providing an undercoat for nickel-chromium plating ?

A:-Sulphate copper bath

B:-Phosphate copper bath

C:-Cyanide copper bath

D:-Acid copper bath

Correct Answer:- Option-C

Question64:-Which is the reason that metallic chromium anodes are not used for chromium plating ?

A:-Low cost in chromium

B:-Not dissolved in chromium bath

C:-Quickly dissolved in chromium bath

D:-Energy saved in chromium bath

Correct Answer:- Option-C

Question65:-Which type of plating is used for cylinder piston parts ?

A:-Hard chromium

B:-Nickel chromium

C:-Bright chromium

D:-Copper chromium

Correct Answer:- Option-A

Question66:-What is the major application of zinc ?

A:-Galvanizing and Anodising

B:-Alloying and Galvanizing

C:-Nickeling and Chromium

D:-Passivation and Galvanization

Correct Answer:- Option-B

Question67:-What kind of damage for metal or alloy caused by absorption of hydrogen ?

A:-Hydrogen embrittlement

B:-Hydrogen over potential

C:-Hydrogen Diffusion

D:-Hydrogen absorption

Correct Answer:- Option-A

Question68:-Which is the traditional coating used in the production of food cans ?

A:-Zinc

B:-Cadmium

C:-Nickel

D:-Tin

Correct Answer:- Option-D

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

A:-90 to 95%

B:-50 to 75%

C:-45 to 60%

D:-98 to 100%

Correct Answer:- Option-D

Question70:-What is the process of removal of coating from its base metal ?

A:-Vapourising

B:-Galvanising

C:-Stripping

D:-De ionizing

Correct Answer:- Option-C

Question71:-Which is the term used for flash gold plating of ornaments ?

A:-Gilding

B:-Sliding

C:-Rolling

D:-Scailing

Correct Answer:- Option-A

Question72:-What is necessary to avoid roughness of deposit due to insoluble particles in the plating solution ?

A:-Agitation

B:-Degreasing

C:-Filtration

D:-Pickling

Correct Answer:- Option-C

Question73:-What is the reason for using cyanide copper plating on complex shaped components ?

A:-High conductivity

B:-High durability

C:-High throwing power

D:-High stability

Correct Answer:- Option-C

Question74:-Which chemical should be added time to time for maintaining the cyanide content of the cyanide copper plating bath ?

A:-Hydrochloric acid

B:-Acetic acid

C:-Sodium hydroxide

D:-Sodium cyanide

Correct Answer:- Option-D

Question75:-Which is the application of cadmium plating ?

A:-Marine equipment

B:-Food stuffs

C:-Drinking water equipment

D:-Kitchen equipment

Correct Answer:- Option-A

Question76:-What is the reason for burnt deposit in copper plating ?

A:-Low metal content

B:-High metal content

C:-High temperature

D:-High current

Correct Answer:- Option-D

Question77:-Which process provides an effective method for the removal of organic impurities from nickel plating solution ?

A:-Filtration

B:-Agitation

C:-Mechanical cathode movement

D:-Activated carbon treatment

Correct Answer:- Option-D

Question78:-Which is added to correct the excess sulphate in bright chromium plating bath ?

A:-Calcium carbonate

B:-Barium carbonate

C:-Sodium carbonate

D:-Nickel carbonate

Correct Answer:- Option-B

Question79:-What is the reason for hard chromium deposit having milky appearance ?

A:-Temperature too high

B:-Temperature too low

C:-Cooling too high

D:-Cooling too low

Correct Answer:- Option-A

Question80:-Which is the possible cause of non-deposition in chromium plating ?

A:-Excess current

B:-Temperature

C:-Faulty contact

D:-Good contacts

Correct Answer:- Option-C

Question81:-The process of coating an oxide layer over a metal when anodic to give desirable decorative layer or for functional properties is called as

A:-Galvanising

B:-Anodising

C:-Tinning

D:-Sheradizing

Correct Answer:- Option-B

Question82:-The maximum thickness of Hard Anodising is

A:-40 µm to 60 µm

B:-20 µm to 30 µm

C:-10 µm to 20 µm

D:-5 µm to 15 µm

Correct Answer:- Option-A

Question83:-The oxide layer which grows both at aluminium/oxide interface and oxide/electrolyte interface is called as

A:-Porous anodising

B:-Colouring

C:-Architectural anodising

D:-Barrier anodising

Correct Answer:- Option-D

Question84:-The process of building aluminium oxide on the surface of Aluminium article using sulfuric acid bath is also known as

A:-Type I Anodising

B:-Type II Anodising

C:-Type III Anodising

D:-None of the above

Correct Answer:- Option-B

Question85:-The most suitable mixture for Sulphuric Chromic acid bath operation is

A:-10% H_2SO_4 to 5% H_2CrO_4

B:-5% H_2SO_4 to 15% H_2CrO_4

C:-10% H_2SO_4 to 25% H_2CrO_4

D:-20% H_2SO_4 to 20% H_2CrO_4

Correct Answer:- Option-A

Question86:-Which process is used for colour effect on the unsealed anodised coatings ?

A:-Stopping off

B:-Lacquering

C:-Dipping

D:-Pickling

Correct Answer:- Option-A

Question87:-Anodic coatings can be stripped out by immersing the articles in

A:-Potassium Hydroxide

B:-Sodium Hydroxide

C:-Deoxidizer

D:-All of the above

Correct Answer:- Option-D

Question88:-To develop soft pastel shades and deep colours without metallic lustre on the dyed films, the anodising applied is

A:-Acetic acid

B:-Boric acid

C:-Sulphuric acid

D:-Chromic acid

Correct Answer:- Option-D

Question89:-The white powdery "bloom" on the surface of the articles anodised in

sulfuric acid is due to

A:-Presence of grease on the article

B:-No anodic film formed

C:-Too high temperature or current density

D:-Film formation prevented by entrapped air or gas pockets

Correct Answer:- Option-C

Question90:-The correct method of sealing the anodised articles is

A:-Nickel Acetate Solution

B:-Dip in Cold Water

C:-Nitric acid

D:-Hydrochloric acid

Correct Answer:- Option-A

Question91:-The test used to evaluate the corrosion resistance using a paste of cupric nitrate, ferric chloride, ammonium chloride and Kaolin on the electroplated articles is

A:-Corrodkote Test

B:-Sulfur dioxide Test

C:-BNF Test

D:-Salt Spray Test

Correct Answer:- Option-A

Question92:-BNF Jest test method is used for measuring _____ of plating of the articles.

A:-Hardness

B:-Base metal

C:-Thickness

D:-Weight

Correct Answer:- Option-C

Question93:-The test developed for corrosion testing of zinc and cadmium coatings on steel is

A:-Acetic acid salt spray test

B:-Salt spray test

C:-Sulfur dioxide test

D:-Eddy current test

Correct Answer:- Option-B

Question94:-The Anodic coating on Aluminium is tested by

A:-Eddy current method

B:-Stripping method

C:-Calcium method

D:-Salt spray method

Correct Answer:- Option-A

Question95:-The most common method of testing the plating parts by its appearance, lustre, colour, surface defects finding is done by

A:-Destructive method

B:-X-ray fluorescence method

C:-Magnetic Induction method

D:-Visual Inspection method

Correct Answer:- Option-D

Question96:-The method to find the discontinuities, cracks and voids on the electroplated articles is called as

A:-Porosity test method

B:-Coulometric method

C:-Weight gain method

D:-None of the above

Correct Answer:- Option-A

Question97:-In salt spray test, the job is exposed to a mist of _____

A:-Sodium hydroxide

B:-Sodium chloride

C:-Sodium carbonate

D:-Sodium bicarbonate

Correct Answer:- Option-B

Question98:-A quick pass/fail test to determine the adhesion of a coating is done by

A:-Pull-off test

B:-Cross-cut test

C:-Scrape Adhesion test

D:-Porosity test

Correct Answer:- Option-B

Question99:-What is the standard adhesion test for coating ?

A:-Permanent magnet gauge

B:-X-ray fluoroscence

C:-Pull off adhesion test

D:-Stripping

Correct Answer:- Option-C

Question100:-The common causes of porosity in coating parts is due to

A:-Defects in the substrate surface

B:-Insufficient thickness of the coating

C:-Imperfect forming processes

D:-All of the above

Correct Answer:- Option-D