

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.

- On which Factor does the Conductance of electrolytic solutions depends ?
(A) Temperature and Pressure (B) Number of charge Carriers
(C) Dielectric Constant of the Solvent (D) All of the mentioned
- The Internationally recommended unit for Conductance is
(A) Poise (B) Dyne (C) Ohm (D) Simens
- Which Of the Following is a specific Conductivity reagent ?
(A) KCl (B) HCl (C) NaCl (D) $MgCl_2$
- Choose the Correct Order Of molar ionic Conductivities of the Following ions.
(A) $Li^+ < Na^+ < K^+ < Rb^+$ (B) $Li^+ < K^+ < Rb^+ < Na^+$ (C) $Li^+ < Na^+ < Rb^+ < K^+$ (D) $Li^+ < Rb^+ < Na^+ < K^+$
- The reciprocal of Conductivity is
(A) Viscosity (B) Resistivity (C) Turbidity (D) None of the mentioned
- Unit of Ionic mobility is
(A) $m^2 sec^{-1} volt^{-1}$ (B) ms^{-1} (C) $msec^{-1} volt$ (D) $m sec^{-1} volt^{-1}$
- On Dilution The Specific Conductance
(A) Increases (B) Remains Same (C) Decreases (D) None of the mentioned
- The Unit of equivalent Conductivity is
(A) Ohm cm (B) $Ohm^{-1} cm^2 (gm\ equivalent)^{-1}$ (C) $Ohm\ cm^{-2} (gm\ equivalent)$ (D) None Of them
- The electrolytic Conductance is a direct measure Of
(A) Resistance (B) Potential (C) Concentration (D) Dissociation
- Flow of electricity through electrolytic Solution is due to migration of
(A) Electron (B) Ions (C) Matter (D) none of the above
- $\Lambda = \lambda_o^+ + \lambda_o^-$ is the mathematical relation of
(A) Ohm's law (B) Debye Huckel limiting law (C) Ostwald's Law (D) Kohlrausch law
- $K = \frac{ca^2}{1-a}$ is the mathematical relation of
(A) Kohlrausch law (B) Ostwald's law (C) Debye Huckel limiting law (D) Ohm's law
- The Plot of molar Conductance Vs $\sqrt{c}$ is strong electrolyte is
(A) Circular (B) linear (C) Parabolic (D) Sinusoidal
- The Dispersion of Conductance also known as
(A) Debye falkenhagen (B) Wein effect (C) Both A and B (D) none of the above
- The increase in Conductance Of an electrolyte at high voltage is known as.
(A) Wein effect (B) Debye Flkenhagen effect (C) Symmetrical effect (D) None of the above
- Speed of an ion in an electric field varies With the
(A) Dietectric Constant (B) Applied Potential gradient (C) Co- efficient Viscosity (D) None of the above
- Which of the Following is Correct Chemical for Ostwald's Dilution law
(A) HCl (B) HNO_3 (C) NH_4OH (D) H_2SO_4
- pH at Which the amino acids does not migrate in electric field in
(A) Isoelectric (B) Electric Point (C) Field Point (D) all of above
- At certain pH environments The isoelectric Point affects the
(A) Solubility of molecules (B) Solubility of Solvent (C) Temperature (D) Density of molecule
- The size range of dispersed Particles should be
(A) $1\ \mu m - 200\ \mu m$ (B) $100\ \mu m - 2\ \mu m$ (C) $100\ \mu m - 200\ \mu m$ (D) none of the above
- Which of the Following Factor is responsible for isoelectric Point
(A) pH (B) Conductance (C) EMF (D) none of the above
- Which of the following Positive and Negative Ions are Present determination Of hydrogen ion Concentration in Pure ampholyte
(A) $+NH_3R\ CO_2H$ (B) $NH_2\ RCO_2$ (C) RH_2^+ (D) A and B
- The EMF of a Galvanic Cell Can be Calculated From
(A) The Size of the electrode (B) The pH of the Solution
(C) The amount Of metal in the anode (D) The E^0 values of the half cell
- The Debye- Huckel theory is only applicable to
(A) Weak electrolyte (B) Strong electrolyte (C) None electrolyte (D) all of these
- What is the K_w value according EMF method
(A) 1.00×10^{-14} (B) 1.018×10^{-14} (C) 1.008×10^{-14} (D) 2.008×10^{-14}
- What is CH^+ value for determine Hydrogen ion concentration in Ampholytes
(A) $CH^+ = \frac{\sqrt{K_1 K_2 C}}{K_1 + C}$ (B) $CH^+ = \frac{\sqrt{K_1 + C}}{K_1 K_2 C}$ (C) $CH^- = \frac{\sqrt{K_1 K_2 C}}{K_1 + C}$ (D) $CH^- = \frac{\sqrt{K_1 + C}}{K_1 K_2 C}$

(27) Which of the Following is Correct For the Properties of bipolar ion equilibrium constant K_2 Sumbot in View Arguments ?

- (A) $K_2 = \frac{K_1}{K_2}$ (B) $K_2 = \frac{K_1}{K_E}$ (C) $K_2 = \frac{K_1}{K_3}$ (D) $K_2 = \frac{K_E}{K_1}$

(28) The value of dissociation constant K_a is heigh for

- (A) Weak acid (B) Strong acid (C) Strong base (D) none of them

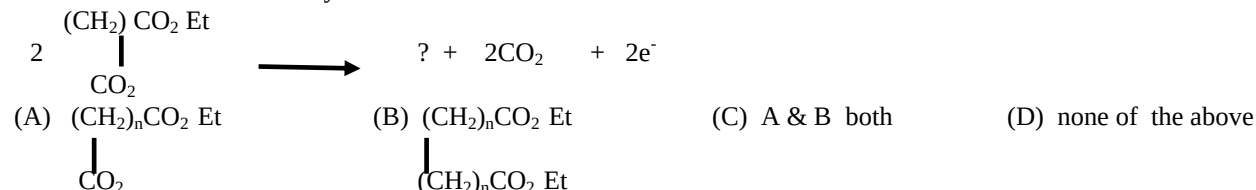
(29) Which of the following is correct method for determine dissociation constant of monobasic acid ?

- (A) Viscometer method (B) Colourimetric method (C) Potentiometric method (D) pH- Meter method

(30) The activity and ionic activity of the Electrolyte denoted by andrespectively

- (A) a and $a_{\pm}$ (B) a^2 and $a_{\pm}$ (C) a^2 and $a_{\pm}^2$ (D) None of the above

(31) In Brown – Walker electrosynthesis Overall anodic Process is



(32) In actual Practice emf of cell is.....

- (A) 0.8 to 1.0 V (B) 1.0 to 1.8 V (C) 0.5 to 1.0 V (D) 0.5 to 1.8 V

(33) Standard electrode potential of hydron is

- (A) 1.00 V (B) 0.00 V (C) 0.01 V (D) 0.001 V

(34) How much the hydrogen over voltage at the platinised platinum and at zero current density

- (A) Zero (B) One (C) Infinite (D) Two

(35) Over voltage will ----- with ----- tempreture

- (A) Decrease; decrease (B) decrease; increase (C) increase; increase (D) none of the above

(36) Which of the following equation in correct

- (A) $U_E = \frac{2zf(Ka)}{3n}$ (B) $U_E = \frac{3n}{2zf(Ka)}$ (C) $U_E = \frac{2zf(Ka)}{z3n}$ (D) Non of the above

(37) Which of the following range is applied electrophoretic technique by means of the platinum electrodes which are immersed in water

- (A) 500to 1500 volts (B) 50 to 200 volts (C) 150 to 250 volts (D) none of the above

(38) Which is a correct for electrophoretic mobility

- (A) Rate at which particles migrate in an electric field (B) charge of particle
(C) Size and shape of particle (D) all of the above

(39) Electrophoresis method used for the

- (A) Proteins and polysaccharides (B) Only for nuclueic acid (C) Complex substance (D) All of the above

(40) Which of the following statement is correct for Electroosmosis

- (A) Dispersion medium it self begins to move (B) Dispersion not to move it sells
(C) A and B both (D) None of the above

(41) Who was the recipient noble prize for demonstration of the heterogeneous nature of colloidal solution

- (A) Stark Einstein (B) Bose- Einstein (C) Richard Zsigmondy (D) none of the above

(42) Which of the following is correct for advantage of hydorgen OverPotential ?

- (A) Electroplating of active metal from aqueous Solution (Pb , Zn , Su) (B) Crrsion Protection : Zinc or tin plated iron
(C) A and B Both (D) none of the above

(43) Which of the following is Correct Tafel equation

- (A) $a = \eta + b \log j$ (B) $\eta = a + b \log j$ (C) $b = a + \eta \log j$ (D) none of the above

(44) 1 gm of fat gives k cal energy

- (A) 19 K cal (B) 9 k cal (C) 29 K cal (D) none of the above

(45) How many Path way for fatty acid oxidation

- (A) 2 (B) 4 (C) 6 (D) none of the above

(46) What is the correct a role of α - oxi dation in fatty acid

- (A) It convert odd chain fatty acid to even chain fatty acid (B) It convert even chain fatty acid to odd chain fatty acid
(C) A & B both (D) None of the above

(47) Which type oxidation are there when one carbon is removed from carboxyl end of fatty acid as CO_2

- (A) B-oxidation (B) Paroxysmal fatty acid (C) α - oxidation (D) w- oxidation

(48) Which of the following expression is not true

- (A) $[\text{H}^+] = [\text{OH}^-] = \sqrt{K_W}$ for a neutral solution at all temperature
(B) $[\text{H}^+] > \sqrt{K_W}$ and $[\text{OH}^-] < \sqrt{K_W}$ for an alkaline solution
(C) $[\text{H}^+] < \sqrt{K_W}$ and $[\text{OH}^-] > \sqrt{K_W}$ for an alkaline solution
(D) $[\text{H}^+] = [\text{OH}^-]$ and 10^{-7} M for neutral solution at all temperature

(49) Hydrogen in metal -hydride is used or acts as anod inbattery

- (A) Lithium battery (B) Lithium MnO_2 cell (C) Lead Accumulator (D) Ni- metal Hydride battery

(50) The decomposition Voltages of the Halogen acids are less thanvolts

- (A) 2.7 Volts (B) 0.7 Volts (C) 1.7 Volts (D) 7.1 Volts