

## 18CYB101J-LAB Slip Test II

\* Required

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The units for specific conductance is... \*

1 point

- ☐ Ohms
- ☒ Ohms.cm
- ☐ Mhos
- ☐ Mhos.cm

If 20 g of NaOH is dissolved in 1 L distilled water, then what is the concentration of the solution? \*

1 point

- ☐ 1 N
- ☐ 2 N
- ☒ 0.5 N
- ☐ 0.05 N

Name the reference electrode and working electrode used in the estimation of Fe(II) ions by potentiometry \*

1 point

- ☐ Platinum electrode and Standard Calomel Electrode



- ☒ Standard Calomel Electrode and Platinum electrode
- ☐ Standard Calomel Electrode and Glass electrode
- ☐ Glass electrode and Platinum electrode

Which among the following apparatus is NOT used in conductometric titration \*

1 point

- ☐ conductivity meter
- ☐ conductivity cell
- ☐ beaker
- ☒ pH meter

In conductometric titration when KOH is titrated against mixture of  $\text{H}_2\text{SO}_4$  and malonic acid, which one will be reacting first? \*

1 point

- ☐ Malonic acid
- ☐ Sodium malonate
- ☐ Disodium malonate
- ☒  $\text{H}_2\text{SO}_4$

When a strong base is added to a strong acid after the neutralization point \*

1 point

- ☐ conductance decreases
- ☒ conductance increases
- ☐ conductance remains constant
- ☐ conductance decreases initially and then increases gradually



Estimation of Fe(II) ions by potentiometry is \_\_\_\_\_ titration. \*

1 point

- ☒ Redox
- ☐ Acid-base
- ☐ Precipitation
- ☐ Complexometric

Which among the following reagents is NOT required in conductometric titration of strong acid Vs strong base \*

1 point

- ☐ HCl
- ☐ NaOH
- ☐ distilled water
- ☒ K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>

What is the working principle of conductometry? \*

1 point

- ☐ measurement of potential
- ☒ measurement of conductivity of solution
- ☐ measurement of emf
- ☐ measurements of pH



Which of the following chemical agent is added during the estimation of Fe(II) ions by potentiometry to avoid the hydrolysis reaction during the titration? \*

1 point

- ☐ FAS
- ☐ Phenolphthalein
- ☒ dil. H<sub>2</sub>SO<sub>4</sub>
- ☐ dil. HCl

When sodium hydroxide is added to HCl, the H<sup>+</sup>ions are replaced by \*

1 point

- ☒ slow moving Na<sup>+</sup> ions
- ☐ fast moving Na<sup>+</sup> ions
- ☐ slow moving OH<sup>-</sup>ions
- ☐ fast moving OH<sup>-</sup>ions

Conductance is measured in the unit \*

1 point

- ☐ ohm
- ☒ mho
- ☐ volts
- ☐ ml



Conductance of a solution depends upon \*

1 point

- ☒ mobility of ions
- ☐ charge of the ions
- ☐ size of the ions
- ☐ colour of the ions

Oxidation states of Cr in Potassium Dichromate and Fe in FAS are \_\_\_\_\_ respectively. \*

1 point

- ☒ (+VII) and (+II)
- ☐ (+V) and (+II)
- ☐ (+VI) and (+III)
- ☐ (+VII) and (+III)

The significance of first derivative and second derivative plot in potentiometric titration is -. \*

1 point

- ☐ To get additional information about the redox reaction
- ☐ To get the voltage of reference electrode
- ☐ To get the value of standard electrode potential
- ☒ To get more accurate equivalence point in case of colored and dilute solutions



Which of the following represents the equivalence point in the graph of EMF vs volume of titrant? \* 1 point

- ☐ Point at the highest EMF
- ☐ Point at the lowest EMF
- ☒ Point at the greatest magnitude of the slope of the curve
- ☐ Point at the least magnitude of the slope of the curve

When NaOH is added to HCl after the neutralization point the conductance increases rapidly \* 1 point

- ☒ because of fast moving OH-ions
- ☐ because of fast moving H<sup>+</sup> ions
- ☐ Because of fast moving Na<sup>+</sup> ions
- ☐ because of fast moving Cl<sup>-</sup> ions

In the pilot titration of NaOH Vs HCl by conductometry, the base is added in increments of \* 1 point

- ☐ 0.1ml
- ☐ 0.2ml
- ☒ 1ml
- ☐ 2ml



Conductivity cell is made up of... \*

1 point

- ☐ Two silver rods
- ☒ Two parallel sheets of platinum
- ☐ Glass membrane of Ag/AgCl
- ☐ Sb-Sb<sub>2</sub>O<sub>3</sub>

Among the following applications for which the conductometry titration is not used? \*

1 point

- ☒ To determine of moisture
- ☐ Purity of water
- ☐ Ionic product of water
- ☐ Precipitation titration

In order to get accurate values in titration of HCL Vs NaOH, the NaOH is added in increments of \*

1 point

- ☐ 2 ml near and beyond the end point
- ☐ 1 ml near and beyond the end point
- ☒ 0.2 ml near and beyond the end point
- ☐ 0.5ml near and beyond the end point



If the ion size decreases in solutions then \*

1 point

- ☐ conductance decreases
- ☒ conductance increases
- ☐ does not affect the conductance
- ☐ first decreases and then increases

The end point in the conductometric titration of strong acid Vs strong base can be determined by plotting \*

1 point

- ☐ Conductance Vs Volume of acid
- ☒ Conductance Vs Volume of base
- ☐ pH Vs volume of acid
- ☐ pH Vs volume of base

In conductometric titration, after both the acids are consumed, there is a steep increase in conductivity due to... \*

1 point

- ☐ increase in total volume of solution
- ☐ increase in temperature
- ☒ increase in OH-ions
- ☐ increase in H<sup>+</sup> ions





All of the following statements are correct regarding potentiometric titration except \*

1 point

- ☐ They are suitable for colored or turbid solutions
- ☒ The EMF of the cell is zero at the equivalence point
- ☐ The results obtained are accurate
- ☐ Acid base titration can also be carried out by potentiometry

At the same concentration and temperature, dilute aqueous solution of strong acid will conduct electricity.... \*

1 point

- ☒ better than dilute aqueous solution of weak acid
- ☐ as much as dilute aqueous solution of weak acid
- ☐ lower than the dilute aqueous solution of weak acid
- ☐ two-fold higher than the weak acid

In the experiment, "Estimation of Fe(II) ions by potentiometry",  $K_2Cr_2O_7$  acts as ---. \*

1 point

- ☐ Reducing agent
- ☒ Oxidizing agent
- ☐ Indicator
- ☐ Catalyst



Which indicator is used in potentiometric titration? \*

1 point

- ☐ Methyl orange
- ☐ Potassium Chromate
- ☐ Eriochrome Black T (EBT)
- ☒ No indicator is used

Conductivity of a solution is directly proportional to \*

1 point

- ☐ dilution
- ☐ current density
- ☒ number of ions
- ☐ volume of the solution

Basically, potentiometer is a device for ---. \*

1 point

- ☒ Comparing two voltages
- ☐ Measuring a current
- ☐ Comparing two currents
- ☐ Measuring a voltage

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