CLA 3 - PRACTICAL COMPONENT - MCQ

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* Required

MCQ - Answer all the questions

The electrolyte solution within the glass electrode is *

- ○ saturated KCl
- ○ dilute KCl
- ○ dilute NaCl
- ◉ saturated NaCl

A buffer solution comprises which one of the following? *

- ○ a weak acid in solution
- ◉ a weak acid and its conjugate base in solution
- ○ a strong acid and its conjugate base in solution
- ○ a weak base in solution

In conductometric titration the titrant concentration must be ..... as that of the titrand *

- (●) same
- ( ) 5 times
- ( ) 10 times
- ( ) does not depend on the concentration

Soft water + Buffer + EBT gives ..... *

- (●) Appearance of wine-red colour
- ( ) Formation of weak complex
- ( ) Formation of reddish brown precipitate
- ( ) Appearance of steel blue colour

Titre value of methyl orange corresponds to *

- ( ) sodium hydroxide plus half the carbonate
- ( ) sodium hydroxide only
- ( ) sodium hydroxide and sodium carbonate
- (●) sodium carbonate only

On increasing the temperature, the viscosity of the fluid _____ *

- ○ Initially decreases then increases
- ◉ Increases
- ○ Decreases
- ○ No change is observed

When pH is below 8.5 the indicator ---- is colourless *

- ○ Methyl orange
- ○ Eriochrome black - T
- ◉ Phenolpthalein
- ○ Potassium chromate

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? *

- ○ dilute HCl
- ○ Conc. HCl
- ◉ dilute sulphuric acid
- ○ dilute nitric acid

End point sharpness in precipitation titration will be improved if *

- ○ reagent concentration decreases and product precipitate Ksp decreases
- ◉ reagent concentration increases and product precipitate Ksp increases
- ○ reagent concentration decreases and product precipitate Ksp increases
- ○ reagent concentration increases and product precipitate Ksp decreases

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

- ◉ 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

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

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

Which of the following is not a primary standard? *

- ○ Silver nitrate
- ◉ Oxalic acid
- ○ Sodium chloride
- ○ Anhydrous sodium carbonate

Glass electrode do not permit the direct potentiometric measurement of ..... ion *

- ○ Na+
- ○ H+
- ○ Ca2+
- ◉ None of the above

In determination of mixture of bases by titration method, the amount of Sodium Hydroxide is calculated as---. *

- ○ N x Equivalent mass of Sodium Carbonate / 10
- ○ N [OH and CO32- portion] x Equivalent mass of Sodium Hydroxide and Sodium carbonate / 10
- ○ N [OH portion] x Equivalent mass of Sodium Hydroxide / 10
- ◉ N [CO32- portion] x Equivalent mass of Sodium carbonate /10

25ml of 0.1 N NaOH solution is required for complete neutralisation of 0.32 g of an acid, What will be the molecular weight of the acid ? *

- ○ 64
- ◉ 128
- ○ 32
- ○ 16

To prepare 25 ml of 0.2 % diluted solution from a 1% solution, we need *

- ○ 10 ml of 1 % solution
- ◉ 5 ml of 1 % solution
- ○ 2.5 ml of 1 % solution
- ○ 7.5 ml of 1 % solution

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

- ◉ 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

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

- ○ Platinum electrode and Standard Calomel Electrode
- ◉ Standard Calomel Electrode and Platinum electrode
- ○ Standard Calomel Electrode and Glass electrode
- ○ Glass electrode and Platinum electrode

If 20 g of NaOH is dissolved in 500 mL of distilled water, then what is the concentration of the solution? *

- ◉ 1 N
- ○ 0.05 N
- ○ 0.5 N
- ○ 0.025 N

The titration of FAS vs Potassium dichromate yields the following : MFe2+VFe2+ = X MCr2O7VCr2O7. What is X ? *

- ○ 3
- ◉ 1
- ○ 6
- ○ 4

Why do we have to standardize AgNO3 solution? *

- ○ To calculate the normality of AgCl
- ○ To find the normality of NaCl
- ○ To calculate the volume of NaCl
- ◉ To find the normality of AgNO3

In EDTA method, the formation constant of the metal-EDTA should be *

- ◉ above 10^4
- ○ below 10^4
- ○ at equilibrium = 0
- ○ not dependent on formation constant

What is the pH range in which chloride determination using Mohr's method is conducted? *

- ○ less than 4
- ○ neutral pH
- ○ 9-12
- ◉ 6-9

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

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

In the plot of reduced viscosity versus concentration, the Y-intercept is ..... *

- ○ specific viscosity
- ◉ intrinsic viscosity
- ○ inherent viscosity
- ○ relative viscosity

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