

Quiz

Name:

Section 9

Q1) Fill the following table

	Mohr's method	Fajan's method	Volhard's method
The Name or Formula of indicator	chromate	potassium chromate	Ferric with HNO_3
Color change	yellow to reddish brown	pink ✓	red brown
PH range	red 6-9 ✓	3-5 ✓	7-10 ✓

Q2) 25.0 ml of 0.235 M standard AgNO_3 solution was added to a sample containing chloride ion, then the excess AgNO_3 was back titrated with 11.25 ml of standard 0.143 M KSCN solution using ferric ion indicator

a- Write the titration equations



b- Calculate the molarity of chloride ion in the sample

$$\text{Mol}^\circ \text{ chlorid} = M \text{ AgNO}_3 \times V(\text{AgNO}_3)$$

$$\frac{25 \times 0.235}{1000} \frac{\text{mol}}{\text{L}} = 0.058 \text{ Mol}$$

$$M V = 0.058 \text{ mol} \times \frac{1}{1000}$$

$$M = \frac{0.058}{10^{-3} \times 10.0 \text{ ml}} =$$

$$\leftarrow 0.058 \text{ mol/L}$$

$$\boxed{5.8 \text{ M}}$$

Student Name

section

Tuesday "9"

9

Q1) Write three rules for using analytical balances

- 1- the material that will be balanced mustn't be hot
- 2- the balance must be calibrated
- 3-

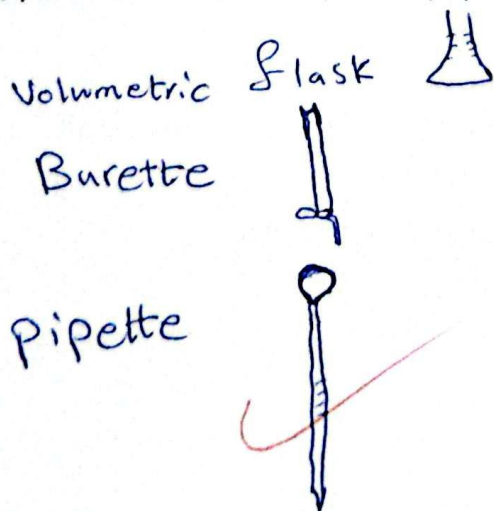
Q2) A 10.00 ml pipette was found to deliver 9.878 g of water at 25 C, calculate the ^{Density} actual volume delivered from the pipette at the same temperature. (Volume of 1g water is 1.0038 ml at 25 C)

$$\begin{aligned}
 1.00 \text{ g} &\rightarrow 1.0038 \text{ mL} \\
 9.878 \text{ g} &\rightarrow x \text{ (mL)} \Rightarrow x = 9.92 \text{ mL} \\
 \rho &= \frac{9.878 \text{ g}}{9.92 \text{ mL}} = 0.996 \text{ g/mL}
 \end{aligned}$$

Q3) write three types of cleaning methods used for glassware

- ① ^{using-} wash bottle
- ② by distilled water
- ③ washing solution

Q4) Draw : Volumetric flask, Burette, Pipette



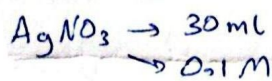
Name:

section: 9

Q1- Write the name or formula of the indicator for the following argentometric methods

Method	Indicator
Mohrs	Potassium chromate
Fajans	dischloro fluorsien
Volhards	Ferric Ion

Q2- In determination of Chloride ion, if 30 ml of 0.10 M Standard solution AgNO_3 were added to 10.0 ml of unknown Chloride solution, the solution was titrated with 6.5 ml of standard 0.05 M KSCN solution. calculate the molarity of Cl^- in the unknown solution



$$V_{\text{un}} = 10.0 \text{ ml}$$

$$V_{\text{KSCN}} = 6.5 \text{ ml}$$

$$M_{\text{KSCN}} = 0.05$$

$$(MV)_{\text{AgNO}_3} = (MV)_{\text{KSCN}}$$

Q3- Account for the following

$$(M)_{\text{Cl}^-} = 6.5 \times 0.05$$

A- Using neutral solution in Mohr's method

if we use basic solution Ag will react with OH^- and become Ag_2O so we need more volume AgNO_3 (positive error)
 if we use acidic solution (positive error)

B- Using slightly basic solution in Fajans method

if we use basic solution, we will need more volume AgNO_3 so will have positive