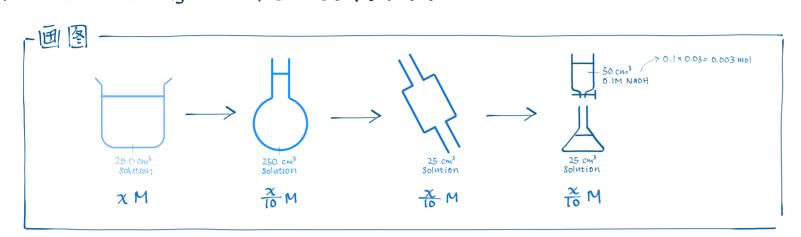
litration (calculations)

Questions

LEVEL I

25.0 cm3 CH3COOH is withdrawn to 250.0 cm3 v-flask Sol. in v-flask is withdrawn by 25.0 cm3 pipette to conical flask, and titrated against O.IM NOOH. 30 cm3 NOOH is needed for complete reaction. Find Stock CH3 COOH concentration.



$$CH_{3}COOH n: NOOH n = 1:1 = n: 0.003$$

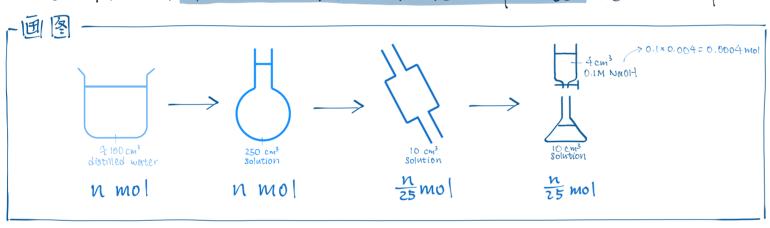
$$n = 0.003 \xrightarrow{CH_{3}COOH used in}$$

$$\frac{x}{10} = \frac{0.003}{0.025}$$

$$x = 1.2 mol dm-3$$

LEVEL 1

0.69 monobasic acid is dissolved completely in a beaker W/100 cm3 distilled water The Sol. in beaker is then poured into 250.0 cm3 v-flask. Distilled water is added until the graduation mark is reached. 10.0 cm³ of solution in v-flask is pipetted into conical flask. 4 cm3 o.1 M NaoH is required for complete reaction. Find acid Mr.



acid
$$n$$
: North $n = 1 : 1 = \frac{n}{25} : 0.0004$

CID N: NOOH N = 1 : 1 =
$$\frac{\pi}{25}$$
 : 0.0004
N = 0.01
 $\frac{0.69}{Mr}$ = 0.01
Mr = 60.0 9 mol⁻¹

LEVEL III-

- 算数 -

0.759 of Solid mixture (KOH & KzCO3) is dissolved in distilled water completely. It is titrated against 0.14 HClags. An average of 120 cm3 HCl is used. Find KOH % by mass.

$$KOH + HCI \rightarrow KCI + H_2O$$
 $\Rightarrow KOH : HCI = 1:1$
 $K_2CO_3 + 2HCI \rightarrow 2KCI_2 + CO_2 + H_2O$ $\Rightarrow K_2CO_3 : HCI = 1:2$

Let x g be KOH mass, $(0.75 - \chi)g$ be K_2CO_3 mass.

 HCI in KOH $v\alpha + HCI$ in $K_2CO_3v\alpha = 0.1 \times 0.12$

$$\frac{\chi}{39.1+16+1} + \frac{0.75 - \chi}{39.1\cdot2+12+16\cdot3} \cdot 2 = 0.012$$

$$\frac{\chi}{56.1} + \frac{0.75 - \chi}{69.1} = 0.012$$

$$\frac{69.1x + 42.075 - 56.1x}{3876.51} = 0.012$$

$$13x = 46.51812 - 42.075$$

$$\chi = 0.342$$

KOH% by mass = $\frac{0.342}{0.75} \cdot 100\% = 45.6\%$