

Question 1- Calculate the mass of 23 mole of

- a) Sulfuric acid H_2SO_4 $23 \text{ mol} \times (2 + 32 + 16 \times 4) \text{ g mol}^{-1} = 2254 \text{ g}$
- b) Aluminium hydroxide $\text{Al}(\text{OH})_3 = 23 \text{ mol} \times (27 + (16+1)\times 3) = 1794 \text{ g}$
- c) Hydrated sodium thiosulfate $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O} = 5708.6 \text{ g}$
- d) Potassium permanganate $\text{KMnO}_4 = 3631.7 \text{ g}$
- e) Potassium dichromate $\text{K}_2\text{Cr}_2\text{O}_7 = 6762 \text{ g}$
- f) Propanoic acid $\text{C}_3\text{H}_6\text{O}_2 = 1702 \text{ g}$
- g) Lead nitrate $\text{Pb}(\text{NO}_3)_2 = 7613 \text{ g}$
- h) Tetrachloromethane $\text{CCl}_4 = 3542 \text{ g}$

Question 2- Complete the table below



Mass of Al_2O_3	Amount of Al_2O_3	Volume of 0.1 mol L^{-1} HCl	Amount of HCl	Mass of AlCl_3	Amount of AlCl_3	Mass of H_2O	Amount of H_2O
35.0 g	0.343 mol	20.6 L	2.06 mol	91.6 g	0.686 mol	18.5 g	1.03 g
0.0224 g	0.00022 mol	13.2 mL	0.00132 mol	0.0587 g	0.00044 mol	0.0119 g	0.00066 g
6.23 g	0.0610 mol	3.66 L	0.366 mol	16.3 g	0.122 mol	3.30 g	0.183 g
529 g	5.19 mol	311 L	31.1 mol	1380 g or 1384 g	10.4 mol	280 g	15.6 g