Aim : To determine acid neutralizing capacity of given water sample.

Glasswares : Burette, pipette, conical flask, funnel

Chemicals : dil H_2SO_4, water sample, tap water, Na_2SO_3, Methyl orange, phenolpthalein

Part I : Standardisation of sulphuric acid

observation table :

Volume of sodium carbonate (Na_2CO_3) solution (ml)	Normality of sodium carbonate (Na_2CO_3)	Burrette Reading (ml)		Vol. of sulphuric acid (H_2SO_4)
		Initial value	Final value	(Final - Initial value)
10	0.02	0	10.1	10.1

Formula : $N_1V_1 = N_2V_2$

calculation : $V_1 = \frac{0.02 \times 10}{10.1} = 0.098$

Part II : Sample titration

observation table - 1

Vol. of water sample taken (ml)	Burette Reding Initial	Burette Reding final	vol. of H_2SO_4 Final - Initial	Normality of H_2SO_4 (N)
100	0	2.7	2.7	0.02

Formula : T as alkanity of $CaCO_3 = \frac{N_{acid} \times V_{acid} \times 50,000}{V_{sample}}$

calculation : T as alkanity of $CaCO_3 = \frac{0.02 \times 2.7 \times 50,000}{100}$

$= 27$

observation table - 2

Vol. of water sample	Burette reading Initial	Burette reading final	Vol. of H_2SO_4	Normality of H_2SO_4
100	2.7	9.4	6.70	0.02

Formula : T as alkanity of $CaCO_3 = \frac{N_{acid} \times V_{acid} \times 50,000}{V_{sample}}$

Calculation : T as alkanity of $CaCO_3 = \frac{0.02 \times 6.7 \times 50,000}{100}$

Part III : Tap water titration

observation table :

Vol. of water sample	Burette Reading		Vol. of H_2SO_4	Normality of H_2SO_4
	Initial	Final		
100	0	5.6	5.60	0.02

Formula : T as alkanity of $CaCO_3$ = $\frac{N_{acid} \times V_{acid} \times 50,000}{V_{sample}}$

Calculation : T as alkanity of $CaCO_3$ = $\frac{0.02 \times 5.6 \times 50,000}{100}$

= 56

Result : Acceptable limit of alkanity in drinking water is less than 200 mg/l water with alkanity beyond this limit taste becomes unplesent. The water sample given has total alkanity of 5.6 mg/l. So it is in the B/S. standard range for drinking water.