Sample problem for EDTA method

- A 100 ml sample of water require 15 ml of 0.02 M EDTA for titration using EBT as indicator. Another 100 ml of water from the same source was boiled and precipitate removed by filtration, the filtrate requires 5 ml of 0.02 M EDTA for titration. Calculate the total hardness, permanent hardness & carbonate hardness of water sample.

- 1 g $CaCO_3$ was dissolved in 1 L solution. Then 100 mL of this solution was required to titrate 90 mL of EDTA solution. A 200 mL of water sample required 72 mL of same EDTA solution. The water sample (200 mL) on boiling was titrated against 36 mL of EDTA solution. Calculate the temporary hardness of the water sample.

- 0.5 g of $CaCO_3$ was dissolved 500 ml with distilled water. 50 ml of the solution required 48 ml of EDTA solution for titration. 50 ml of hard water sample requires 15 ml EDTA and after boiling and filtering requires 10 ml of EDTA solution. Calculate the temporary hardness.

- 10 mL of water sample required 20 mL of EDTA to titrate. Given that 20 mL of $CaCl_2$ solution required 30 mL of EDTA solution and the strength of $CaCl_2$ solution is equivalent to 1.5 g of $CaCO_3$ per liter. Calculate the hardness of the water sample.