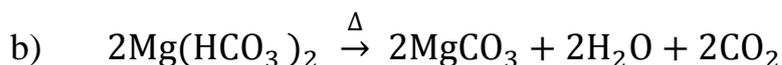
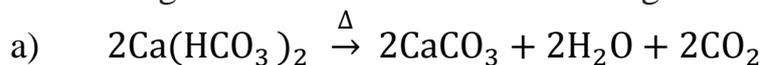


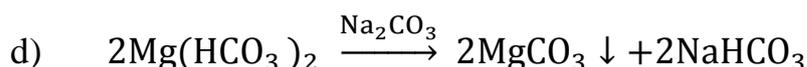
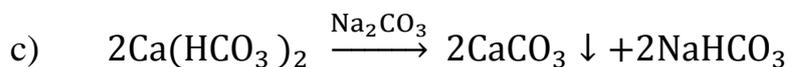
Discussion questions of experiment no (3)

1. What are methods to remove the turbidity? With equation?

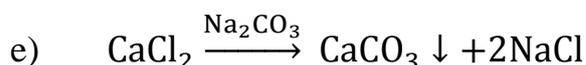
Heating the hardness water until boiling



The addition of sodium carbonate, where the bicarbonate calcium and magnesium dissolved water are converted into insoluble carbonates precipitate in the solution



The addition of sodium carbonate, where react with the salts that cause permanent turbidity are converted into insoluble carbonates deposited in the solution



f) evaporation and condensation (Distilled water)

g) Water purification by method Ion exchange.

2. What is water turbidity?

Water turbidity, it is formed in the water by the presence of the calcium and magnesium salts dissolved in water and sometimes in the presence of the iron salts in water.

3. What is the reason of presence of the turbidity and what are the types of it?

- Temporary turbidity: It is formed in the water as a result of the containing this water on $\text{Ca}(\text{HCO}_3)_2$, $\text{Mg}(\text{HCO}_3)_2$ or both of them

- Permanent turbidity: This is produced by the presence of the sulfate, chloride calcium and sulfate, chloride magnesium dissolved in water.

4. How to obtain deionized water? Write the equations?

Can be obtain deionizer water passes the ordinary water in a strong cation column (H^+ - Form), the solution exited from this column (eluent solution) is free from cations but it contains anions and hydrogen ion (acid solution). Then, acidic solution should be passes through strong anionic column as a (OH^- - Form). Solution exited (eluent) contains hydrogen ion and hydroxyl ion and is free of cations and anions. According to the following equations

In cationic exchanger



In anionic exchanger

