

## Question 27 (5 marks)

Describe the physical and chemical processes needed to purify and sanitise a town water supply.

5

The catchment area is first protected from any source of pollutants such as storm water drains, industrial run off, urban run off. The ~~water~~ <sup>water</sup> is then clarified and the suspended solids are removed. <sup>To</sup> the water then Aluminium hydroxide is added which ~~coagulates~~ <sup>coagulates</sup> the particles. Then after flocculation, filtration through sand and gravel filters occurs to remove any ~~solid~~ <sup>unwanted</sup> particles and bacteria. The water is then chlorinated by the addition of  $\text{HOCl}$ , it is the  $\text{OCl}^-$  which is responsible for killing the bacteria. The water is then fluoridated, which is not required but it allows the addition of fluoride ions which strengthen teeth. Then the water is brought to home. ~~It~~ Using membrane filters is a much better method to filtration (like the sand and gravel filter) as it has a tiny hole for a tiny hole through which only water can travel through.