Question 31 (6 marks)

(a) A student collected a 250 mL sample of water from a local dam for analysis. The data collected are shown in the table.

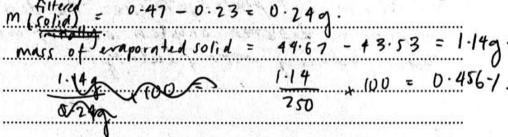
Mass of filter paper	0.23 g
Mass of filter paper and solid	0.47 g
Mass of evaporating basin	43.53 g
Mass of basin and solid remaining	44.67 g

(i) The water was filtered and the filtrate evaporated to dryness.

2

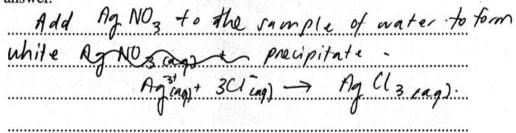
2

Calculate the percentage of the total dissolved solids in the dam sample.



(ii) It is suspected that the water in the dam has a high concentration of chloride ions.

Describe a chemical test that could be carried out on the water sample to determine the presence of chloride ions. Include an equation in your answer.



Question 31 continues on page 24

Question 31 (continued)

(b) Name an ion other than chloride that commonly pollutes waterways, and identify its source and the effect of its presence on water quality.

Lead ions also pollutes water wage. It is sourced from off partitions buildings, leaded potrol, extracting read from ones and food water from read glazza pottery.

Lead ions in waterways is toxic as a heavy metal.

End of Question 31

Phosphate ions also pollute waterways. It is san red from fertiliver run off or detergents. Its presence in naterways will increase the growth of algae blooms that leading to entrophication which blocks out light from Penotra ting the water, thus killing plants as they cannot photosynthesive. The decomposition of plants dipletes oxygen levels of water thus reducing water quality.