

3. Sample X contains a common cation and two anions. Use the information given in the experiment column in Table 3 to complete the observations and inferences and hence identify the common cation and the two anions.

Table 3

S/n	Experiment	Observations	Inferences
1	Observe the appearance of the sample X.		
2	Heat small portion of sample X in a dry test tube.		
3	Place a spatulaful of sample X in a test tube; add concentrated sulphuric acid.		
4	Place a spatulaful of sample X in a test tube and add sodium hydroxide solution.		
5	Prepare a solution of X and divide it into two portions.		
	(i) In the first portion add barium chloride.		
	(ii) In the second portion add silver nitrate solution.		

Conclusion

- (a) Write down the ionic equations which took place in stage 4 and 5 (i) above.
 (b) The cation in sample X is _____ and the anions are _____ and _____.