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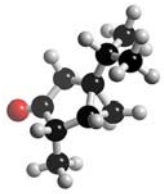
2.5 – HALOGENS – PPQ4



Name …… Form ……

4) a) Describe how the addition of aqueous silver nitrate followed by aqueous ammonia can be used to distinguish between aqueous solutions containing chloride, bromide and iodide ions.

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…… (6)

b) Define the terms electronegativity and reducing agent. Explain why fluorine has the highest electronegativity of the halogen elements and the fluoride ion has the lowest reducing power of the halide ions.

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c) Describe what you see when concentrated sulphuric acid is added to separate solid samples of sodium chloride and sodium bromide and the mixtures are gently warmed. In each case, identify any gaseous products formed and write equations for the reactions in which they are formed.

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…… (10)

d) A 1.20 g sample of a solid mixture of sodium carbonate and sodium iodide was treated with an excess of dilute nitric acid. When effervescence stopped, an excess of silver nitrate solution was added. A precipitate was formed which weighed 0.850 g.

State the role of the acid in this analysis, write equations for the reactions which occurred, and calculate the percentage by mass of sodium iodide in the mixture.

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(Ch02Winter 1998)