

2002 HIGHER SCHOOL CERTIFICATE EXAMINATION
Chemistry

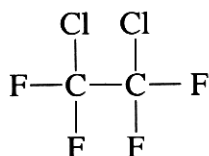
Section I – Part B (continued)

Marks

Question 25 (6 marks)

a) What is the systematic name of the CFC in the diagram?

1

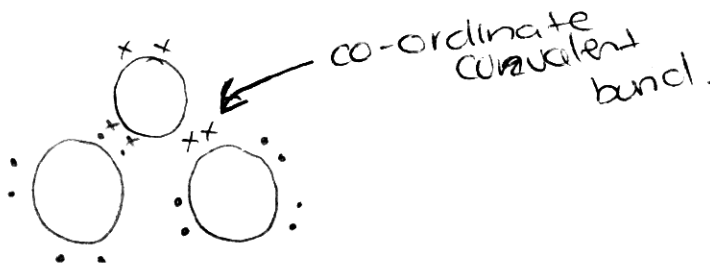


Chloro fluoro carbon

~~1,1,1,2-tetrachloro-2,2-difluoro ethane~~

b) Identify the bonding within ozone, using a Lewis electron-dot diagram.

2



c) Discuss how CFCs damage the ozone layer, using relevant equations.

3

CFCs can break down in the stratosphere to form free Cl radicals. These radicals can react with ozone ($\text{Cl} + \text{O}_3 \rightarrow \text{ClO} + \text{O}_2$) and then the ClO can break back down to form $\text{Cl} + \text{O}_2$ ($\text{ClO} + \text{O} \rightarrow \text{Cl} + \text{O}_2$). This process occurs faster than the process of ozone being formed thus, the amount of ozone in the ozone layer becomes less & less.