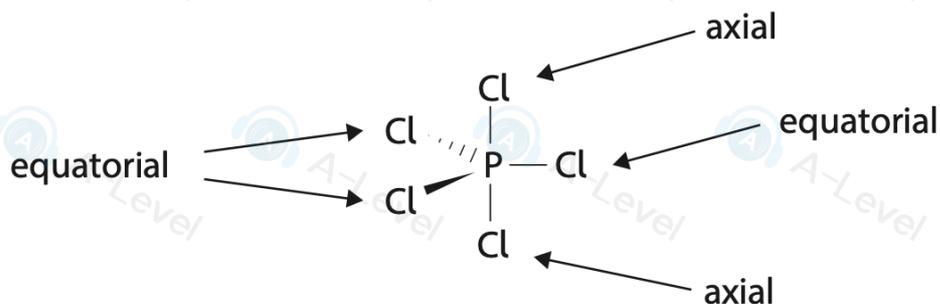


13 In the gas phase, PCl_5 exists as molecules. They are trigonal bipyramidal.



Each chlorine atom can be replaced one at a time by a fluorine atom. The two axial chlorine atoms are replaced before the three equatorial atoms.

Which of the resulting molecules does **not** have a permanent dipole?

- A PCl_4F
- B PCl_3F_2
- C PCl_2F_3
- D PClF_4

(Total for Question 13 = 1 mark)

12 Which cation would be the most polarising?

- | | Radius | Charge |
|--|--------|--------|
|--|--------|--------|

(Total for Question 12 = 1 mark)

14 Which molecule is polar?

- A CO_2
- B SF_6
- C SO_2
- D SiCl_4

(Total for Question 14 = 1 mark)

14 Which molecule is polar?

- A 1,1-dibromopropane
- B *E*-1,2-dibromoethene
- C hexafluoroethane
- D tetrachloromethane

(Total for Question 14 = 1 mark)

11 Which compound shows the greatest degree of polarisation?

- A sodium chloride
- B sodium iodide
- C magnesium chloride
- D magnesium iodide

(Total for Question 11 = 1 mark)

13 Which molecule has the **largest** bond angle?

- A BCl_3
- B CO_2
- C H_2O
- D NH_3

(Total for Question 13 = 1 mark)
