

Exercise 0.23 – VSEPR Theory – 5 and 6 charge centres

Q023-01 Draw the Lewis structure, state the shape and predict the bond angles for the ICl_4^- species.

Q023-02 Draw and name the shape of the PCl_6^- ion:

Q023-03 What is the distribution of electron pairs and the arrangement of atoms in the triiodide ion, I_3^- ?

	Electron pairs	Atoms arrangement
A.	Tetrahedral	bent
B.	Square planar	linear
C.	Trigonal bipyramid	linear
D.	Trigonal bipyramid	bent

Q023-04 Which of the following contains a bond angle of 90° ?

- I PCl_4^+
- II PCl_5
- III PCl_6^-

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

Q023-05 Draw a diagram that represents the correct geometry of the BrF_5 molecule and state its shape.

Q023-06 What is the smallest bond angle found in the PF_5 molecule?

- A. 90°
- B. 109.5°
- C. 120°
- D. 180°

Q023-07 Which molecule or ion does not have a tetrahedral shape?

- A. XeF_4
- B. SiCl_4
- C. BF_4^-
- D. NH_4^+