Reading the Bonds in a Phosphate Model

Scoring guide · one credit per question · review written work against each rubric

Reading the Bonds in a Phosphate Model

Question 1

Choice (2)

K has total positive charge 3 × (+2) = +6 and total negative charge 2 × (−3) = −6.

Question 2

The P and O atoms share electrons within the phosphate ion, giving covalent bonds. Oppositely charged calcium and phosphate ions attract in the solid.

Question 3

$Ca_3(PO_4)_2$ shows three calcium ions and two phosphate ions. The 2 multiplies the whole PO_4 group, so the count is two phosphorus and eight oxygen atoms.

Question 4

The neutral set loses one charge of +2, leaving a net charge of −2. Equivalently, two calcium ions give +4 and two phosphate ions give −6.