

ionic bonding – answers

1. A positive ion will be attracted to any negative ion.

TRUE: any positively charged object will be attracted to any negatively charged object.

2. A sodium ion is only bonded to the chloride ion it donated its electron to.

FALSE: each positive sodium ion is bonded to each of the neighbouring chloride ions - upto 6 of them.

3. The reason a bond is formed between chloride ions and sodium ions is because an electron has been transferred between them.

FALSE: The reason a bond is formed between chloride ions and sodium ions is because they have opposite charges.

4. An ionic bond is the attraction between a positive ion and a negative ion.

TRUE.

5. A positive ion can be bonded to any neighbouring negative ion, if it is close enough.

TRUE. The bond is just the attraction between the oppositely charged ions.

6. A negative ion will be attracted to any positive ion.

TRUE

7. It is not possible to know where the ionic bonds are, unless you know which chloride ions accepted electrons from which sodium ions.

FALSE: as the bonding is just the attraction between ions, there will be a bond between any opposite charged ions that are next to each other.

8. A negative ion can only be attracted to one positive ion.

FALSE: there is no limit to the number of positive ions that a negative ion can be attracted to (although there are only so many that can fit round it)

9. In the diagram a sodium ion is attracted to one chloride ion by a bond and is attracted to three other chloride ions just by forces.

FALSE: In the diagram each sodium ion is attracted to up to 6 chloride ions by a bond.

10. The reason a bond is formed between chloride ions and sodium ions is because they have opposite charges.

TRUE: the opposite charges attract them together

11. A positive ion can only be attracted to one negative ion.

FALSE: there is no limit to the number of positive ions that a negative ion can be attracted to

12. An ionic bond is when one atom donates an electron to another atom, so that they both have full outer shells.

FALSE: an ionic bond is the electrostatic force which holds two oppositely charged ions together.

13. There are no molecules shown in the diagram.

TRUE: A molecule comprises a group atoms only weakly bonded (if at all) to other molecules, like carbon dioxide or nitrogen in the air.