

2. Information about four elements from the third period of the periodic table is shown in the table.

Element	Bonding	Structure
Sodium		lattice
Silicon	covalent	
Phosphorus		molecular
Chlorine	covalent	

- (a) Complete the table to show the bonding and structure for each element. 2
(An additional table, if required, can be found on *page 34*.)
- (b) Covalent radius is half the distance between the nuclei of two covalently bonded atoms of an element.
- (i) State the trend in covalent radius going from sodium to chlorine. 1
- (ii) Suggest why no covalent radius is listed in the data booklet for argon. 1



2. (continued)

- (c) Explain **fully** why the boiling points of the noble gases increase going down group 0.

In your answer you should name the van der Waals forces involved.

3

[Turn over

