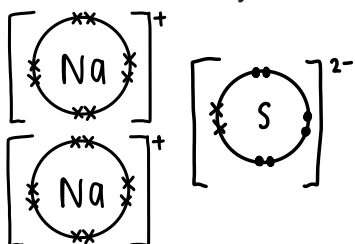


## **AS level Chemistry A**

**H032/02** Depth in chemistry

### **Question Set 8**

1. Sodium sulfide,  $\text{Na}_2\text{S}$ , is an ionic compound of sodium, Na, and sulfur, S.
- (a) Draw a 'dot-and-cross' diagram to show the bonding in sodium sulfide. Show outer electrons only.



[2]

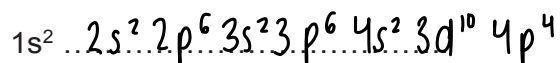
- (b) The table below compares the properties of sodium sulfide, sodium and sulfur. Complete the table.

		Sodium sulfide	Sodium	Sulfur
Melting point/ $^{\circ}\text{C}$		1180	98	113
Type of structure (giant or simple)		giant	simple	simple
Electrical conductivity (good or poor)	solid	poor	good	poor
	liquid	good	good	poor

- (c) Selenium is in the same group of the periodic table as sulfur.

[3]

- (i) Complete the full electron configuration of a selenium atom.

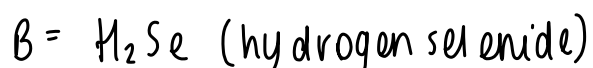


[1]

- (ii) Sodium selenide reacts with hydrochloric acid to form a toxic gas, **B**, with a relative molecular mass of 81.0.

Identify gas **B** and write an equation for this reaction.

[2]



**Total Marks for Question Set 2: 8**

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