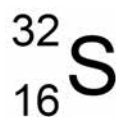


0 1

**Figure 1** represents an atom of sulfur.**Figure 1**

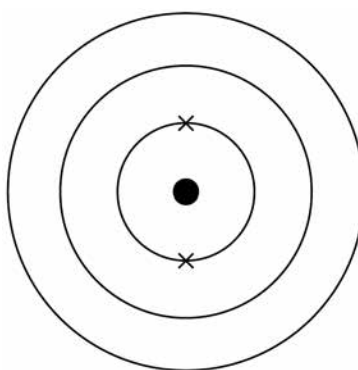
0 1 . 1

Complete **Table 1****[1 mark]****Table 1**

Particle	Number of particles in a sulfur atom
Electron	16
Neutron	
Proton	16

0 1 . 2

Sulfur is in Group 6 of the periodic table.

Complete the electronic structure of the sulfur atom represented in **Figure 2****[1 mark]****Figure 2**

0 1 . 3 Sulfur reacts with oxygen to produce sulfur dioxide.

Complete the word equation for this reaction.

[1 mark]

sulfur + \_\_\_\_\_

0 1 . 4 What effect is caused by sulfur dioxide?

[1 mark]

Tick **one** box.

Acid rain

☐

Global dimming

☐

Global warming

☐

Sea levels rising

☐

Question 1 continues on the next page

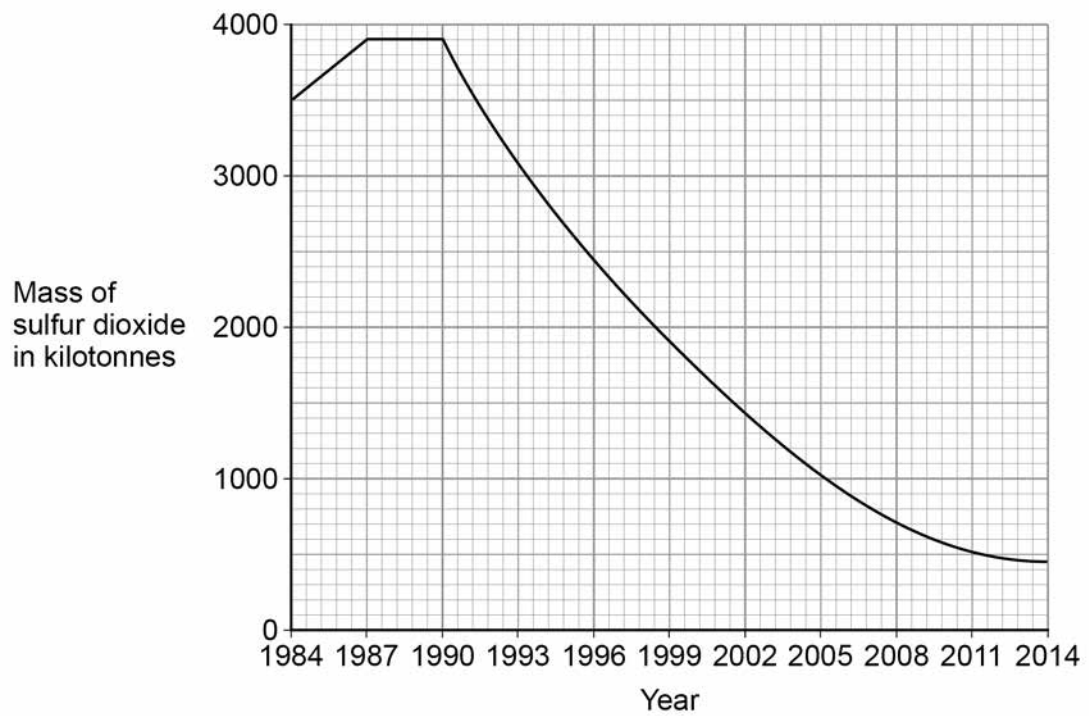
Turn over ►



0 1 . 5

**Figure 3** shows the mass of sulfur dioxide in the Earth's atmosphere between 1984 and 2014

**Figure 3**



A student said:

'the mass of sulfur dioxide in the atmosphere decreased every year between 1984 and 2014'

Is the student correct?

Use data from **Figure 3** to justify your answer.

**[3 marks]**

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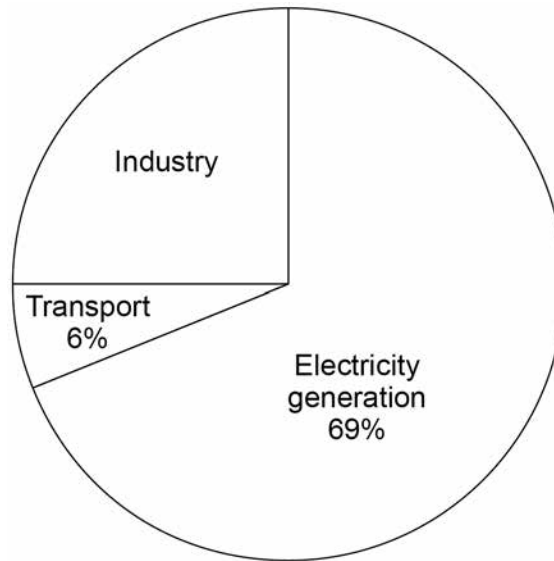
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0 1 . 6

**Figure 4** shows the percentage of sulfur dioxide released by human activities.**Figure 4**

Calculate the percentage of sulfur dioxide released by industry.

**[2 marks]**

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Percentage = \_\_\_\_\_ %

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9**Turn over for the next question****Turn over ►**

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	16		1	AO2 5.1.1.5
01.2	8 e <sup>-</sup> in 2nd shell 6 e <sup>-</sup> in 3rd shell	allow •, x, e <sup>-</sup> or any combination	1	AO2 5.1.1.7
01.3	oxygen → sulfur dioxide	allow = in place of → do <b>not</b> accept sulfur oxide ignore symbols	1	AO2 5.1.1.1 5.9.3.1
01.4	acid rain		1	AO1 5.9.3.2
01.5	yes / no  any <b>two</b> from: <ul style="list-style-type: none"> <li>increases</li> <li>constant</li> <li>decreases</li> </ul> correct date range for any one of the above <ul style="list-style-type: none"> <li>(increases) 1984–1987</li> <li>(constant) 1987–1990</li> <li>(decreases) 1990–2014</li> </ul>	allow goes up allow similar allow goes down allow levels off (at the end)	2          1	AO3 5.9.3.1          AO2 5.9.3.1
01.6	(69 + 6 =) 75  100 – 75 = 25(%)	an answer of 25(%) scores <b>2</b> marks   allow a final percentage calculated from an incorrect value in the first step	1   1	AO2 5.9.3.1
<b>Total</b>			<b>9</b>	