4 Some melting points of Period 3 oxides are given in this table.

	Na_2O	SiO_2	SO_2	SO_3
Melting point / K	1548	1883	200	290

4 (a) Explain, in terms of structure and bonding, why sodium oxide has a high melting point.

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(2 marks)

4 (b) Explain, in terms of structure and bonding, why sulfur trioxide has a higher melting point than sulfur dioxide.

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(2 marks)

4 (c) Some Period 3 oxides have basic properties.

State the type of bonding in these basic oxides.
Explain why this type of bonding causes these oxides to have basic properties.

Type of bonding .....

Explanation .....

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(3 marks)

4 (d) Sulfur dioxide reacts with water to form a weakly acidic solution.

4 (d) (i) Ions are formed when sulfur dioxide reacts with water.
Write an equation for this reaction.

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(1 mark)

4 (d) (ii) With reference to your equation from part **(d) (i)**, suggest why sulfur dioxide forms a weakly acidic solution.

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(1 mark)

4 (e) Suggest why silicon dioxide is described as an acidic oxide even though it is insoluble in water.

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(1 mark)

10

Turn over for the next question