

**AQA – Properties of Period 3 elements and their oxides – A2 Chemistry P3**

1. June/ 2020/Paper\_3/No.2

0 2

This question is about oxides.

0 2 . 1

Sodium oxide forms a solution with a higher pH than magnesium oxide when equal amounts, in moles, of each oxide are added separately to equal volumes of water.

State why both oxides form alkaline solutions.

Suggest why sodium oxide forms a solution with a higher pH than the solution formed from magnesium oxide.

**[2 marks]**

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0 2 . 2

Give an equation for the reaction between phosphorus(V) oxide and water.

**[1 mark]**

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0 2 . 3

In the Contact process, sulfur(IV) oxide is converted into sulfur(VI) oxide using vanadium(V) oxide as a catalyst.

Give **two** equations to show how the vanadium(V) oxide acts as a catalyst in this process.

**[2 marks]**

Equation 1 \_\_\_\_\_

Equation 2 \_\_\_\_\_

## 2. June/ 2019/Paper\_3/No.17

Which statement is **not** correct about the trends in properties of the hydrogen halides from HCl to HI ?

[1 mark]

**A** The boiling points decrease.

**B** The bond dissociation energy of H–X decreases.

**C** The polarity of the H–X bond decreases.

**D** They are more easily oxidised in aqueous solutions.