

# Sulfuric Acid

## Question Paper

Level	O Level
Subject	Chemistry
Exam Board	Cambridge International Examinations
Topic	The Chemistry and Uses of Acids, Bases And Salts
Sub-Topic	Sulfuric Acid
Booklet	Question Paper

**Time Allowed:** 14 minutes

**Score:** /12

**Percentage:** /100

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1 Which uses for sulfuric acid are correct?

- 1 as a bleach in the manufacture of wood pulp for paper
- 2 as a food preservative in tinned foods
- 3 as a raw material in the manufacture of detergents
- 4 as a fertiliser

**A** 1 and 3      **B** 2 and 4      **C** 2 only      **D** 3 only

2 Which ion is **not** present in dilute sulfuric acid?

**A**  $\text{H}^+$       **B**  $\text{OH}^-$       **C**  $\text{SO}_3^{2-}$       **D**  $\text{SO}_4^{2-}$

3 Which substance is **not** a raw material used in the manufacture of sulfuric acid?

- A** air
- B** sulfur
- C** sulfur dioxide
- D** water

4 Which is a use of sulfuric acid?

- A** as a bleach
- B** in the manufacture of ammonia
- C** in the manufacture of fertilisers
- D** in the manufacture of sulfur trioxide

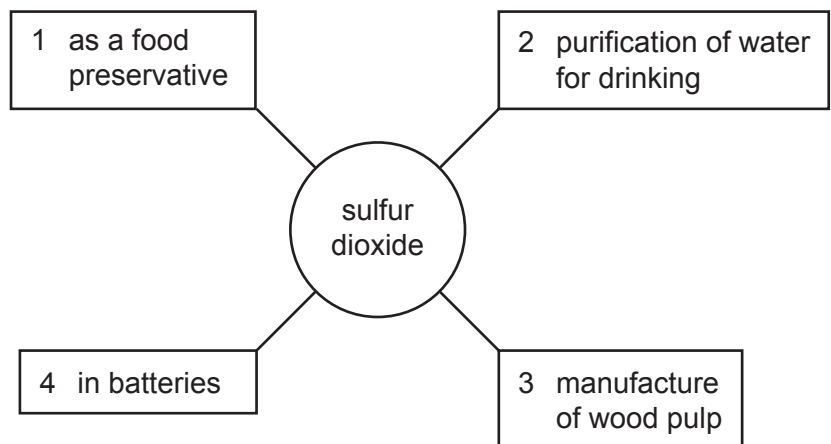
5 The following statements about dilute sulfuric acid are **all** correct.

- 1 Addition of Universal Indicator shows that the solution has a pH value of less than 7.0.
- 2 A white precipitate is formed when aqueous barium nitrate is added.
- 3 The solution reacts with copper(II) oxide, forming a blue solution.
- 4 The solution turns anhydrous copper(II) sulfate from white to blue.

Which two statements confirm the acidic nature of the solution?

**A** 1 and 2      **B** 1 and 3      **C** 2 and 4      **D** 3 and 4

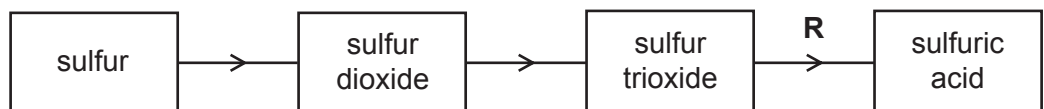
6 The diagram shows some of the uses of sulfur dioxide.



Which two of the numbered boxes are correct?

- A** 1 and 2      **B** 1 and 3      **C** 2 and 3      **D** 2 and 4

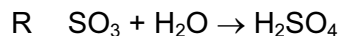
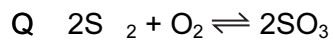
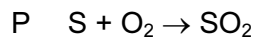
7 The diagram represents the manufacture of sulfuric acid by the Contact process.



What is used in step R?

- A** concentrated sulfuric acid followed by water  
**B** vanadium(V) oxide  
**C** water followed by concentrated sulfuric acid  
**D** water only

8 These reactions are used in the manufacture of sulfuric acid.



Which reactions are speeded up by using a catalyst?

- A** P only      **B** Q only      **C** R only      **D** Q and R

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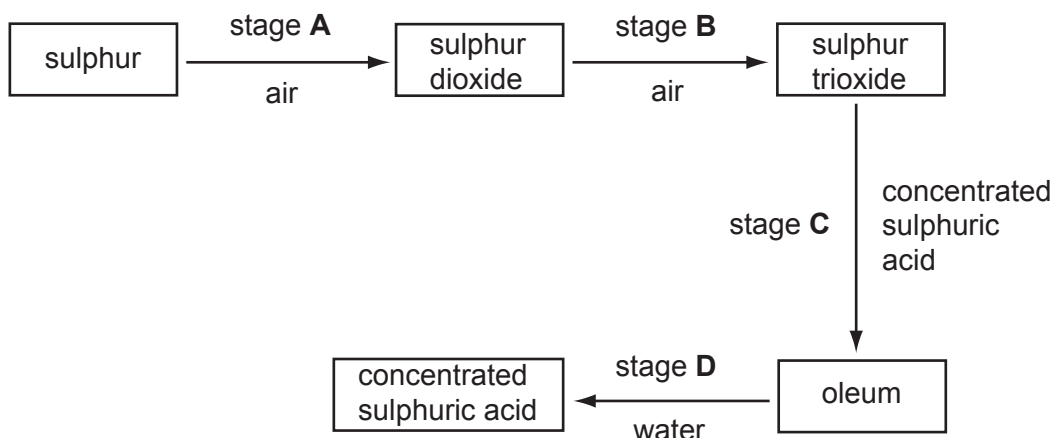
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9 In the Contact process, the sulfur trioxide formed is

- A passed into concentrated sulfuric acid.
- B passed into dilute sulfuric acid.
- C passed into oleum ( $\text{H}_2\text{S}_2\text{O}_7$ ).
- D passed into water.

10 The following scheme shows four stages in the conversion of sulphur to sulphuric acid.

In which stage is a catalyst used?



11 What is the catalyst used in the preparation of ethyl ethanoate from ethanol and ethanoic acid?

- A concentrated sulphuric acid
- B nickel
- C vanadium(V) oxide
- D yeast

12 Which of the following occurs in the Contact process?

- A Sulphur dioxide is dissolved in water.
- B Sulphur trioxide is dissolved in water.
- C Sulphur dioxide is dissolved in dilute sulphuric acid.
- D Sulphur trioxide is dissolved in concentrated sulphuric acid.