

## Sulfur – 2021 IGCSE 0620

### 1. June/2021/Paper\_11,12&13/No.31

Which row describes the uses of sulfur and sulfur dioxide?

	sulfur	sulfur dioxide
A	extraction of aluminium	food preservative
B	extraction of aluminium	manufacture of cement
C	manufacture of sulfuric acid	food preservative
D	manufacture of sulfuric acid	manufacture of cement

### 2. June/2021/Paper\_21/No.31

Which catalyst is used in the Contact process?

- A calcium oxide
- B iron
- C manganese(II) oxide
- D vanadium(V) oxide

### 3. June/2021/Paper\_23/No.30

Which substance is used as a catalyst in the manufacture of sulfuric acid by the Contact process?

- A iron
- B nickel
- C phosphoric acid
- D vanadium(V) oxide

### 4. March/2021/Paper\_12&22/No.32

Which substance is used as a bleach in the manufacture of paper?

- A carbon dioxide
- B nitrogen dioxide
- C silicon dioxide
- D sulfur dioxide

5. March/2021/Paper\_32/No.5

This question is about sulfur and compounds of sulfur.

(a) Sulfur is a non-metal.

Describe **three** physical properties which are typical of non-metals.

1 .....

2 .....

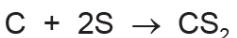
3 .....

[3]

(b) Name **one** source of sulfur.

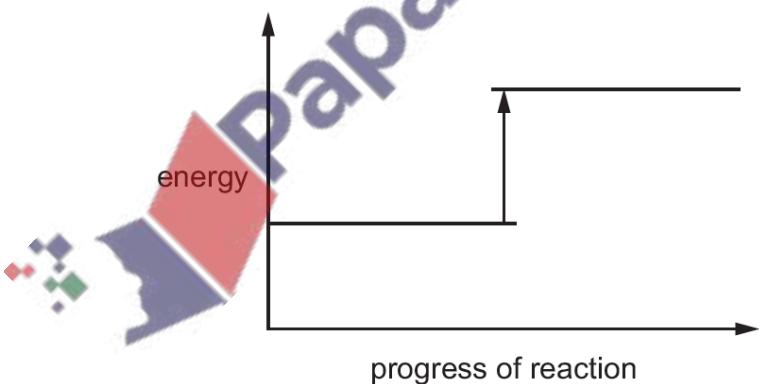
..... [1]

(c) When carbon is heated with sulfur, carbon disulfide,  $\text{CS}_2$ , is produced.



(i) Complete the energy level diagram for the production of carbon disulfide by writing these formulae on the diagram:

- $\text{C} + 2\text{S}$
- $\text{CS}_2$ .



[1]

(ii) Explain, using information on the energy level diagram, how you know that this reaction is endothermic.

..... [1]

(d) Carbon disulfide is a liquid at room temperature.

Describe the separation and motion of the particles in carbon disulfide liquid.

separation .....

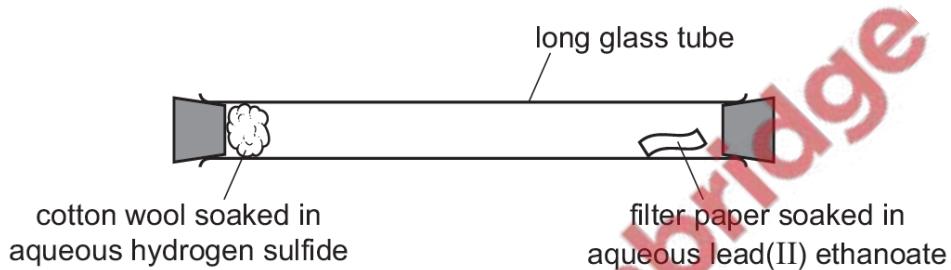
motion .....

[2]

(e) Hydrogen sulfide is a gas which turns filter paper soaked in aqueous lead(II) ethanoate from white to black.

Hydrogen sulfide is slightly soluble in water.

A long glass tube is set up as shown.



At first, the filter paper soaked in aqueous lead(II) ethanoate does not turn black.

After a short time, the filter paper soaked in aqueous lead(II) ethanoate turns black.

Explain these observations using the kinetic particle model.



[3]

(f) Sulfur dioxide is a pollutant in the air.

(i) Give **one** adverse effect of sulfur dioxide on buildings.

..... [1]

(ii) Sulfur dioxide is used to bleach paper.

Give one **other** use of sulfur dioxide.

..... [1]

[Total: 13]