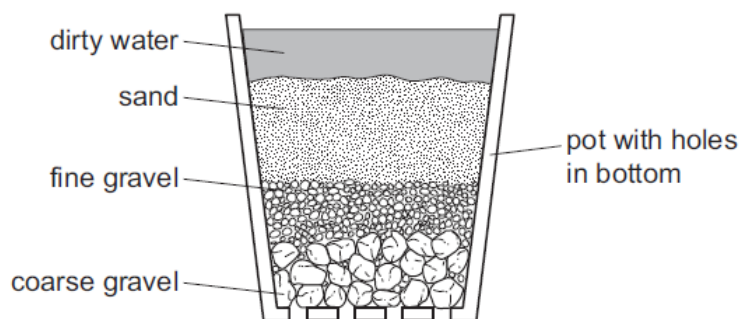


1. **Nov/2022/Paper_11,12,13,21,22,23/No.28**

The diagram shows a stage in the purification of dirty water.



Which process does this apparatus show?

- A chlorination
- B condensation
- C distillation
- D filtration

2. **Nov/2022/Paper_11/No.29**

Which substance in polluted air damages stonework and kills trees?

- A carbon dioxide
- B carbon monoxide
- C lead compounds
- D sulfur dioxide

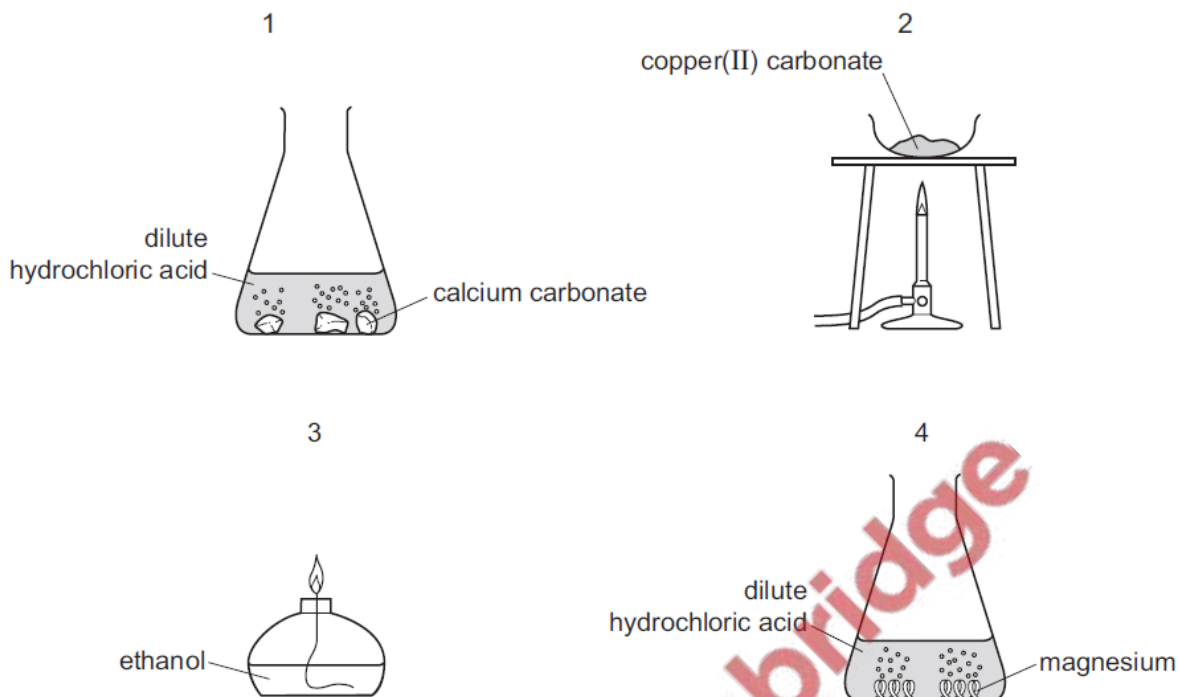
3. **Nov/2022/Paper_12/No.29**

Which substance in polluted air damages stonework and kills trees?

- A carbon dioxide
- B carbon monoxide
- C lead compounds
- D sulfur dioxide

4. Nov/2022/Paper_12/No.31

Four reactions are shown.



Which reactions produce water?

A 1 and 2

B 1 and 3

C 2, 3 and 4

D 3 and 4 only

5. Nov/2022/Paper_13/No.29

Which substance in polluted air damages stonework and kills trees?

A carbon dioxide

B carbon monoxide

C lead compounds

D sulfur dioxide

6. Nov/2022/Paper_13/No.30

A farmer has four different compounds that are used in fertilisers.

	name of compound	formula of compound
1	potassium nitrate	KNO_3
2	ammonium phosphate	$(\text{NH}_4)_3\text{PO}_4$
3	ammonium nitrate	NH_4NO_3
4	urea	$(\text{NH}_2)_2\text{CO}$

Which two compounds are mixed to make an NPK fertiliser?

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

7. Nov/2022/Paper_13/No.31

Waste vegetables are placed in a sealed container with air and left for a number of days.

Bacteria cause the vegetables to decompose. During the decomposition the bacteria respire.

What happens to the concentration of carbon dioxide and methane in the air in the container?

	concentration of carbon dioxide	concentration of methane
A	decreases	decreases
B	does not change	increases
C	increases	does not change
D	increases	increases

8. Nov/2022/Paper_21,22,23/No.29

Which substance in polluted air damages stonework and kills trees?

- A** carbon dioxide
B carbon monoxide
C lead compounds
D sulfur dioxide

This question is about air and fertilisers.

(a) Air contains nitrogen, oxygen, noble gases and carbon dioxide.

State the percentage of nitrogen in clean, dry air.

..... [1]

(b) Polluted air contains oxides of nitrogen.

(i) Give **one** source of oxides of nitrogen in the air.

..... [1]

(ii) State **one** adverse effect of oxides of nitrogen on health.

..... [1]

(c) Many fertilisers contain nitrogen and potassium.

(i) Name **one other** element found in most fertilisers.

..... [1]

(ii) Explain why farmers use fertilisers on fields where crops are to be grown.

..... [1]

(iii) Describe a test for potassium ions.

test

observations

[2]

[Total: 7]