What gases does the fire extinguisher contain?
Fire extinguishers contain **carbon dioxide (CO_2), nitrogen (N_2), or halon gases** depending on the type.

Write the molecular formula of urea.
The molecular formula of urea is **$CO(NH_2)_2$**.

Write down a use of dry ice.
Dry ice is used for **cooling and creating fog effects**.

Which gas is obtained by reacting limestone and dilute HCl?
Carbon dioxide (CO_2) is obtained:
$CaCO_3 + 2HCl \rightarrow CaCl_2 + H_2O + CO_2$

Give reasons: Carbon dioxide is collected in an open gas jar.
Carbon dioxide is collected in an open gas jar because it is **heavier than air and insoluble in water**.

What will happen if the end of the delivery tube is dipped inside the reacting mixture in Woulfe's bottle?
The gas will **bubble back into the solution, causing contamination and reduced gas collection**.

What happens when carbon dioxide is passed through lime water for a long time? Write with chemical equations.

Initially, lime water turns **milky**:
$Ca(OH)_2 + CO_2 \rightarrow CaCO_3\downarrow + H_2O$

On passing more CO_2, it turns **clear**:
$CaCO_3 + CO_2 + H_2O \rightarrow Ca(HCO_3)_2$