

Look at the center map. It's a complete roadmap for sulfur.

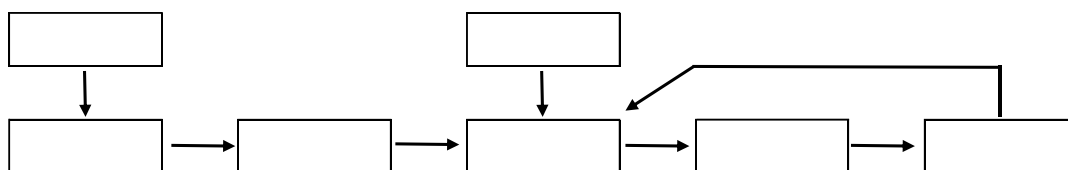
Oxidation States -2 to +6

Acid (H^+) makes these reactions possible by releasing the sulfide or sulfite ion as a gas.

Right-pointing arrows (Steps 2, 3, 5) represent Oxidation (gaining O or losing e^-).
Left-pointing arrows (Step 7) represent Reduction. Cu (Copper) is used for reduction here.

We need a special Catalyst (V_2O_5) for the second step ($SO_2 \rightarrow SO_3$). Remember, catalysis is key!

This is called the Contact Process. Here is a tricky point for your quiz! SO_3 has very high sublimation. It doesn't dissolve well in water because it releases too much heat. The practical solution is making "Oleum" first, then diluting it.



A: FeS B: H_2S C: S D: $NaHSO_3$ E: SO_2 F: SO_3 G: H_2SO_4

① H_2SO_4 ② SO_2 ③ O_2 ④ H_2SO_4 ⑤ O_2 ⑥ H_2O ⑦ Cu