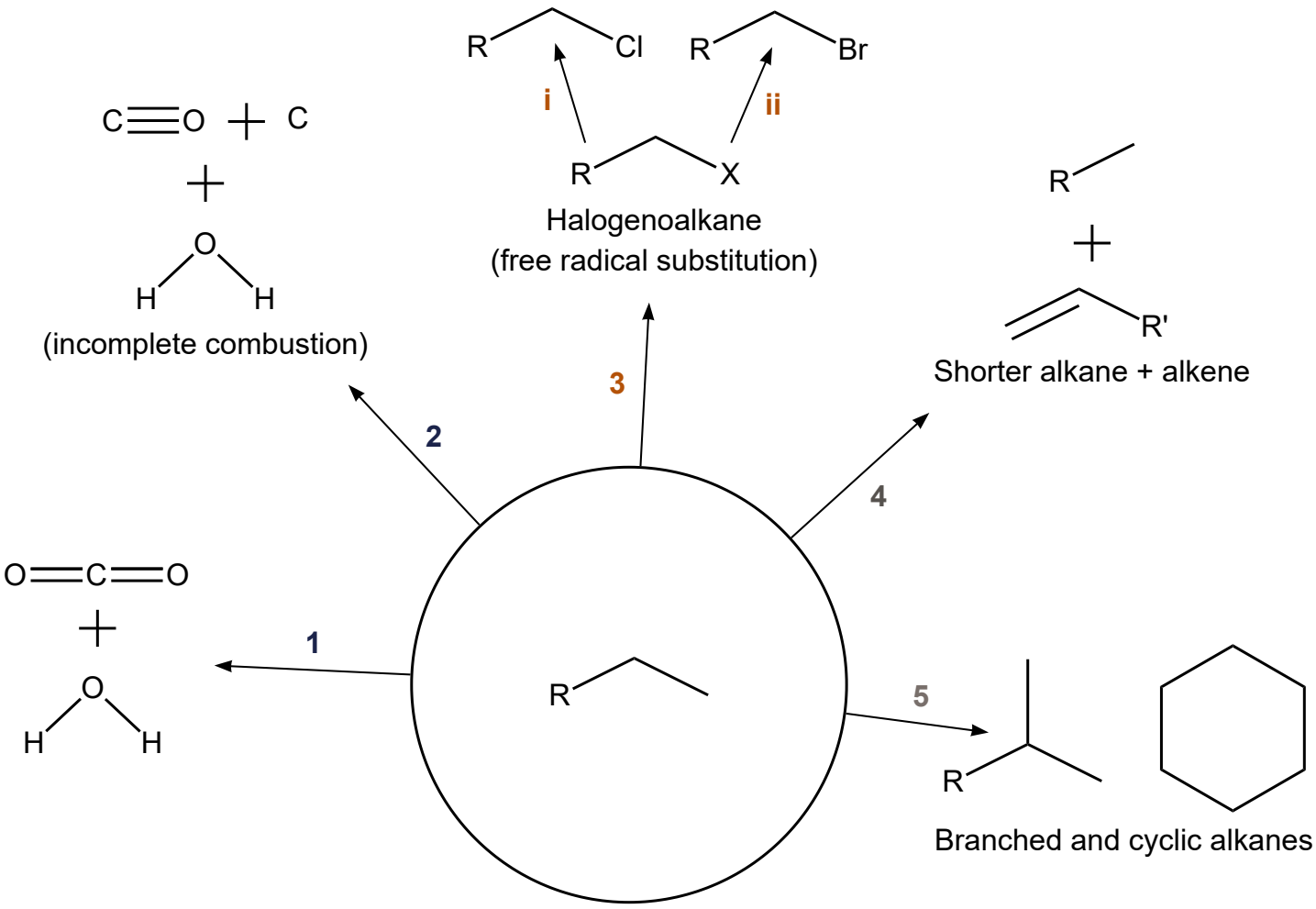
Alkanes Map

Edexcel A Level Chemistry · Topic 6B Alkanes



1 combustion: excess $O_2(g)$, burn (complete combustion)

2 combustion (incomplete): limited $O_2(g)$, burn; CO is toxic, C forms soot (particulates)

3 substitution (free radical): UV light
i Cl_2
ii Br_2

4 cracking: long-chain alkane, heat with a catalyst (e.g. zeolite or Al_2O_3)

5 reforming: straight-chain alkane, heat with a catalyst (e.g. Pt)

Radical substitution gives a mixture of products (further substitution), so it has limited use in synthesis.
Catalytic converters remove CO, NOx and unburned hydrocarbons.
Reforming makes branched and cyclic hydrocarbons that burn more efficiently.

combustion **substitution** **cracking** **reforming**

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