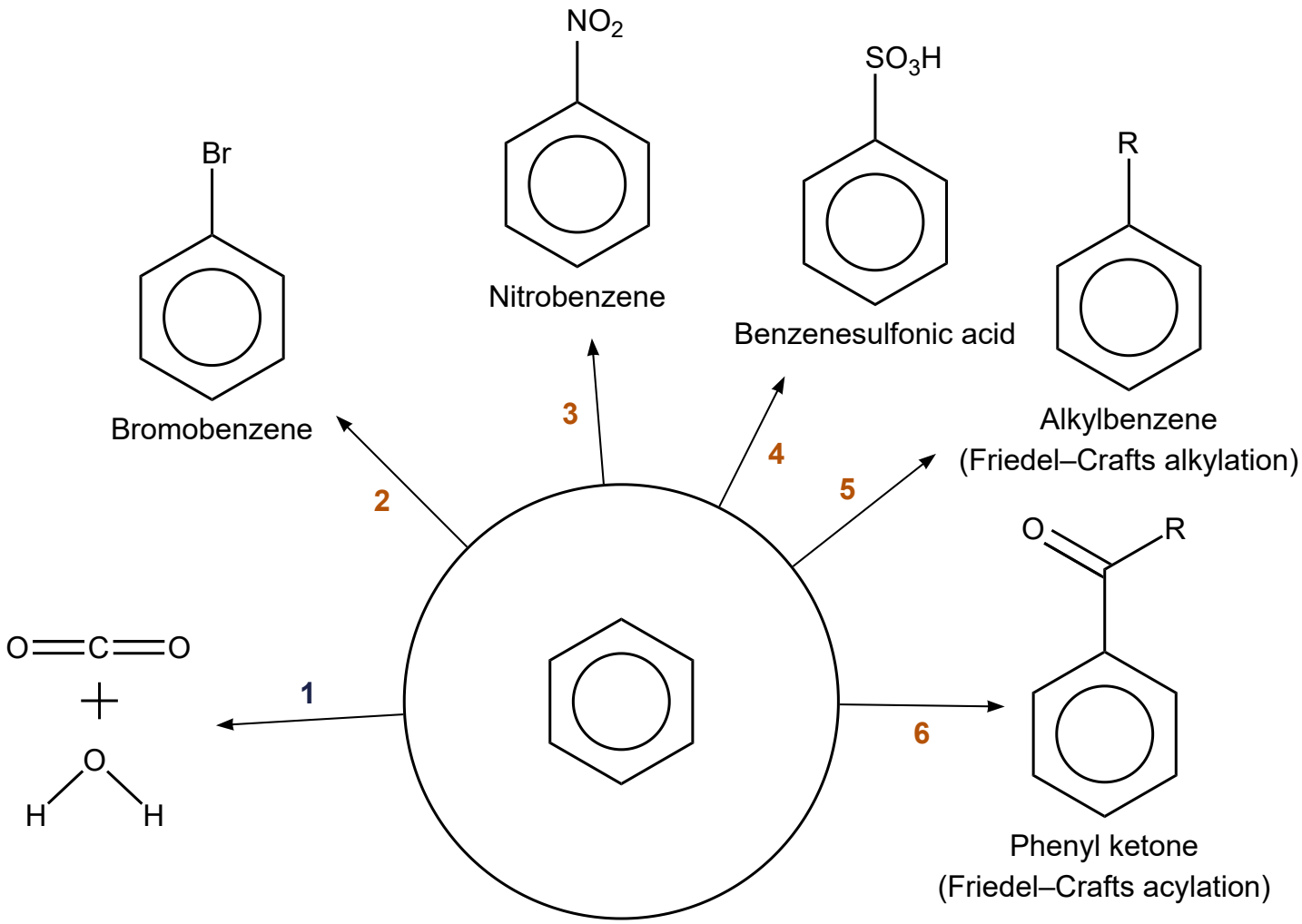
Benzene Map

Edexcel International A Level Chemistry · Unit 5 · Topic 18



1 combustion: O_2 (air), burns with a smoky flame

2 substitution (electrophilic): Br_2, $FeBr_3$ catalyst (or iron filings), room temperature

3 substitution (electrophilic): conc. HNO_3 and conc. H_2SO_4, below 55 °C

4 substitution (electrophilic): fuming sulfuric acid (H_2SO_4 + SO_3), warm

5 substitution (electrophilic): halogenoalkane, R–Cl, $AlCl_3$ catalyst, anhydrous, warm

6 substitution (electrophilic): acyl chloride, RCOCl, $AlCl_3$ catalyst, anhydrous, warm

Benzene does not decolourise bromine water: the delocalised π system resists addition.
Phenol decolourises bromine water at room temperature (white precipitate of 2,4,6-tribromophenol).
Nitrobenzene is reduced to phenylamine by Sn and conc. HCl (Topic 19).

combustion **substitution**

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