**4.1.1 Exercise 3 - Phenol**

1. Draw a molecule of phenol and describe its structure.
2. Explain why phenol is more reactive to electrophiles than benzene.

Write equations for the reactions of phenol with:

1. Bromine
2. Nitric acid

State and explain the conditions needed.

State and explain what you would see in reaction 2 (a)

3. Explain why phenol, unlike aliphatic alcohols, can react with metals and alkalis.

1. Write an equation for the reaction of phenol with sodium
2. Write an equation for the reaction of phenol with sodium hydroxide

4. State four substances which phenol is used to make.