## 1. How will you detect the presence of alcohol?

Alcohol can be detected by the following tests.

**Sodium metal test:** When a small piece of sodium is added to an alcohol, hydrogen 1. gas is evolved with effervescence.

$$2C_2H_5OH + 2Na \longrightarrow 2C_2H_5ONa + H_2\uparrow$$
  
Ethanol Sodium ethoxide

2. **Phosphorus pentachloride test:** On treatment with phosphorus pentachloride, alcohols become warm and hydrogen chloride gas is evolved.

- 2.
  - (a) When ethanol is treated with an acidic solution of potassium dichromate it is oxidised to ethanoic acid.

$$CH_3 CH_2 OH + 2 [O] \xrightarrow{K_2 Cr_2 O_7 + H_2 SO_4} CH_3 COOH + H_2 O$$

(b) Ethanol burns in air with a blue flame to form carbon dioxide water.

$$C_2 H_5 OH + 3 O_2 \longrightarrow 2 CO_2 + 3 H_2 O$$
  
Ethanol