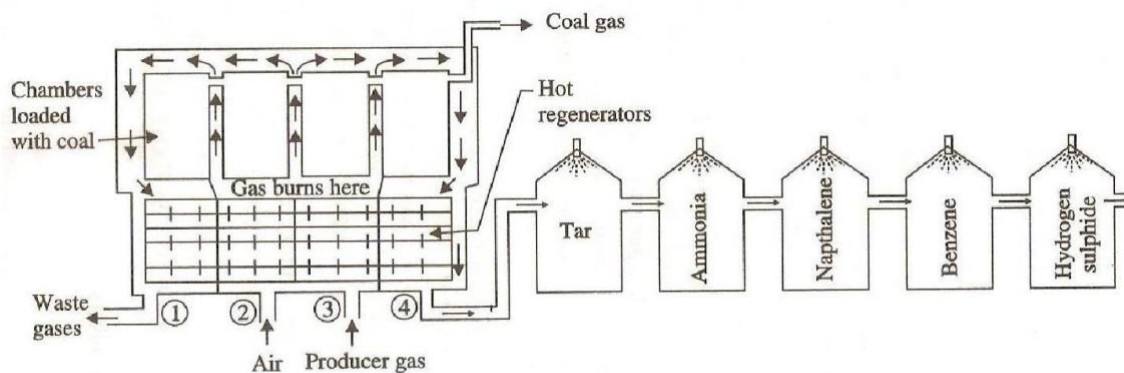
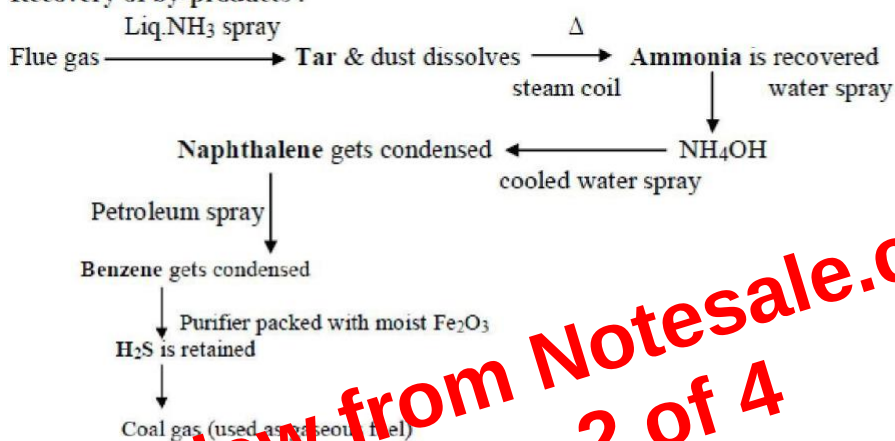




Recovery of by-products :



Advantages

1. The carbonization time is less.
2. Heating can be done externally by producer gas.
3. Variable by products can be recovered.

Power alcohol

Definition

- When ethyl alcohol is blended with petrol at concentration of 5-10%.
- Ethyl alcohol is used in internal combustion (IC) engine.
- The addition of ethyl alcohol to petrol to increases octane number.

Manufacture

- Manufacturing of power alcohol involves two steps

Step – 1: manufacture of ethyl alcohol

- Ethyl alcohol can be synthesized by fermentation of molasses (residue of sugar) with yeast.
- This fermentation yields only about 20 % of alcohol.
- $C_6H_{12}O_6$ (in presence of yeast) $\rightarrow C_2H_5OH + 2 CO_2$
- Concentration of alcohol can be increased up to 97.6 % by fractional distillation to forms constant boiling mixture with water.
- This constant boiling mixture has a lowering B.Pt than alcohol.