

In the following reaction, X is  $X \xrightarrow{\text{Bromination}} Y \xrightarrow{\text{NaNO}_2/\text{HCl}} Z \xrightarrow[\text{C}_2\text{H}_5\text{OH}]{\text{Boiling}} \text{Tribromobenzene}$

- A) benzoic acid
- B) salicylic acid
- C) phenol
- D) aniline

**Correct Answer: D**

**Solution :**

[d] Proceed backward; tribromobenzene is produced by boiling compound Z with  $\text{C}_2\text{H}_5\text{OH}$ ; Z in turn is obtained by diazotisation of Y, so Y and Z should have  $-\text{NH}_2$  and  $-\text{N}_2\text{Cl}$  groups respectively, in addition to three Br atoms. Hence X should be  $\text{C}_6\text{H}_5\text{NH}_2$

