Q3. In the chemical reactions, the compound 'A' and 'B' respectively are (2010)

NH₂ $\xrightarrow{\text{NaNO}_2} A \xrightarrow{\text{HBF}_4} B$

1) nitrobenzene and fluorobenzene

2) phenol and benzene

3) benzene diazonium chloride and fluorobenzene

4) nitrobenzene and chlorobenzene

Answer: option 3 is correct