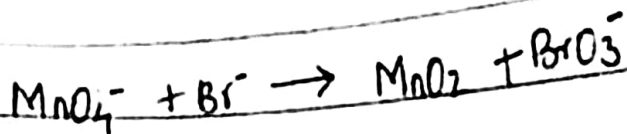# ASSIGNMENT

Q, Balance the given redox reactions using oxidation number method in basic medium.

$$MnO_4^-(aq) + Br^-(aq) \rightarrow MnO_2(s) + BrO_3^-(aq)$$

$$MnO_4^- + Br^- \rightarrow MnO_2 + BrO_3^-$$
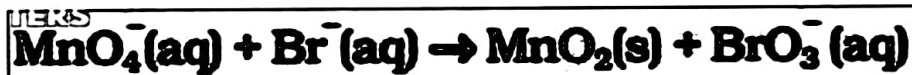
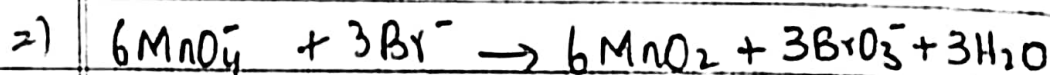oxidation no. of Mn changes from +7 to +4
On " " " Br " " -1 to +5

multiply MnO_4^- and MnO_2 with $(5-(-1))=6$
" Br " BrO_3^- with $(7-4)=3$

$\Rightarrow$ $6 MnO_4^- + 3Br^- \rightarrow 6 MnO_2 + 3BrO_3^-$
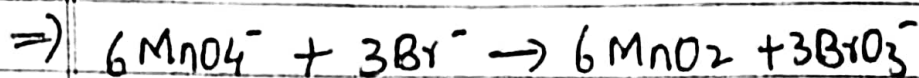
To balance O atoms add 3 H_2O molecules on RHS

$=)$ $6 MnO_4^- + 3Br^- \rightarrow 6 MnO_2 + 3BrO_3^- + 3H_2O$

To balance H atoms, add $6H^+$ ions on LHS

$-)$ $6 MnO_4^- + 3Br^- + 6H^+ \rightarrow 6 MnO_2 + 3BrO_3^- + 3H_2O$
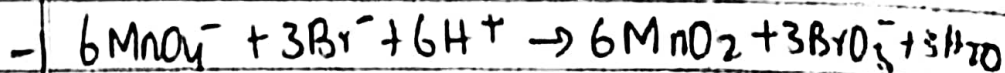
Since reaction is taking in basic medium
add $6OH^-$ ions on either side

$=)$ $6 MnO_4^- + 3Br^- + 6H^+ + 6OH^- \rightarrow 6MnO_2 + 3BrO_3^-$
$+ 3H_2O + 6OH^-$

$=)$ $6 MnO_2 + 3Br^- + 6H_2O \rightarrow 6 MnO_2 + 3BrO_3^-$
$+ 3H_2O + 6OH^-$