

13. In the Bohr series of lines of hydrogen spectrum, the third line from the red end corresponds to which one of the following inter-orbit jumps of the electron for Bohr orbits in an atom of hydrogen

(1) $5 \rightarrow 2$

(2) $4 \rightarrow 1$

(3) $2 \rightarrow 5$

(4) $3 \rightarrow 2$

Solution:

The lines falling in the visible spectrum include the Balmer series. So the third line would be $n_1 = 2$ and $n_2 = 5$. Thus the transition is $5 \rightarrow 2$

Hence option (1) is the answer