Taking the Bohr radius as a_0 = 53pm, the radius of Li^{++} ion in its ground state, on the basis of Bohr's model, will be about

(a) 53 pm
(b) 27 pm
(c) 18 pm
(d) 13 pm

Correct option is C)

According to Bohr's model of atom, radius of an atom in its ground state is $r = \frac{r_o}{Z}$ where r_o is Bohr's radius, and Z is atomic number.

As r_o = 53pm and atomic number of Lithium atom is 3 so, $r = \frac{53}{3}$ = 17.67pm = 18pm verifies option (c).