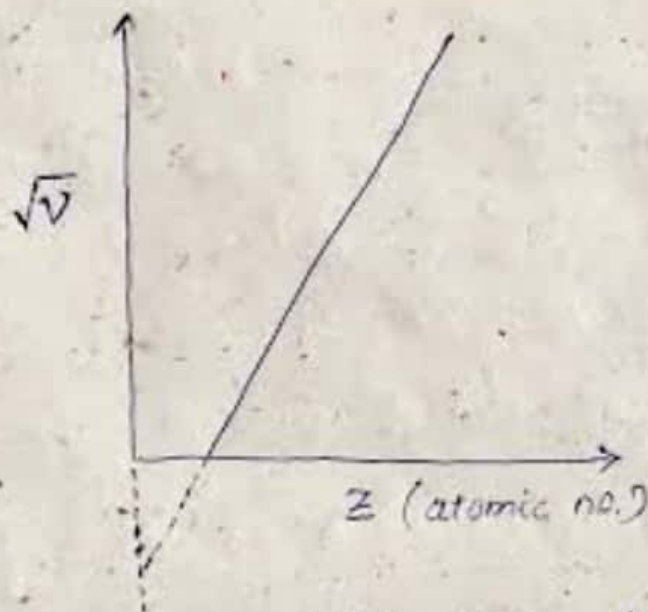


Solution:-

Moseley's law: "The frequency ( $\nu$ ) of a characteristic X-ray of an element is related to its atomic number  $Z$ " by,

$$\sqrt{\nu} = a(Z - b) \rightarrow (1)$$



Since we know that  $K\beta_1$  lines of Cu, Mo, or W refer to the transition from the M-shell to the K-shell (i.e.  $n_2=1, n_1=3 \Rightarrow 3 \rightarrow 1$  transition)

$$\text{Since, } \frac{1}{\lambda} = R(Z-1)^2 \left[ \frac{1}{1^2} - \frac{1}{3^2} \right]$$

As, atomic no. ( $Z$ ) of ( $W > Mo > Cu$ ) hence, the energy of  $K\beta_1$  will be order of ( $E_{Cu} > E_{Mo} > E_W$ ) because ( $E \propto \frac{1}{\lambda}$ )