(c) : $\lambda_1 = \lambda$, $K.E_1 = 2eV$, $\phi = 1$ eV, $\lambda_2 = \lambda/2$, $K.E_2 = ?$

According to Einstein's photoelectric equation,

$$K.E_{max} = \frac{hc}{\lambda} - \phi$$

$$K.E_1 = \frac{hc}{\lambda_1} - 1$$

$$2 = \frac{hc}{\lambda_1} - 1 \Rightarrow \frac{hc}{\lambda_1} = 3eV \qquad ...(i)$$

Now,. $K.E_2 = \frac{2hc}{\lambda_1} - 1 = 2 \times 3 - 1 = 5$ eV