Physics Formula Sheet

Chapter by chapter, topic by topic. Written by the PadhoNa team for quick revision.

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CHAPTER 28

Dual Nature of Matter

Photoelectric effect

PHOTON

$$E = h\nu = \frac{hc}{\lambda}, \qquad E(\text{eV}) \approx \frac{1240}{\lambda(\text{nm})}, \qquad p = \frac{h}{\lambda}$$

EINSTEIN'S EQUATION

$$K_{\max} = h\nu - \phi = eV_0, \qquad \phi = h\nu_0$$

$$\text{stopping potential depends on frequency, not intensity; current} \propto \text{intensity}$$

de Broglie wavelength

$$\lambda = \frac{h}{p} = \frac{h}{mv} = \frac{h}{\sqrt{2mK}}$$

ELECTRON THROUGH V VOLTS

$$\lambda = \frac{h}{\sqrt{2meV}} \approx \frac{12.27}{\sqrt{V}}\ \text{Å}$$

THERMAL PARTICLE

$$\lambda = \frac{h}{\sqrt{3mk_BT}}$$

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