

Quantum phenomena

Specification reference	Checklist questions	
3.2.2.1	Can you explain threshold frequency and the photon explanation of threshold frequency?	<input type="checkbox"/>
3.2.2.1	Can you explain work function ϕ and stopping potential?	<input type="checkbox"/>
3.2.2.1	Can you recognise and use the photoelectric equation: $hf = \phi + E_{K(\max)}$?	<input type="checkbox"/>
3.2.2.1	Can you explain that $E_{K(\max)}$ is the maximum kinetic energy of the photoelectrons?	<input type="checkbox"/>
3.2.2.2	Can you explain ionisation and excitation?	<input type="checkbox"/>
3.2.2.2	Can you describe the electron volt?	<input type="checkbox"/>
3.2.2.2	Can you convert eV into J and vice versa?	<input type="checkbox"/>
3.2.2.3	Can you use line spectra as evidence for transitions between discrete energy levels in atoms?	<input type="checkbox"/>
3.2.2.3	Can you use the formula $hf = E_1 - E_2$?	<input type="checkbox"/>
3.2.2.4	Can you explain why electron diffraction suggests that particles possess wave properties and the photoelectric effect suggests that electromagnetic waves have a particulate nature?	<input type="checkbox"/>
3.2.2.4	Can you calculate the de Broglie wavelength using $\lambda = \frac{h}{mv}$, where mv is the momentum?	<input type="checkbox"/>
3.2.2.4	Can you explain how and why the amount of diffraction changes when the momentum of the particle is changed?	<input type="checkbox"/>

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3.2.2.4	Can you explain that knowledge and understanding of the nature of matter changes over time?	<input type="checkbox"/>
3.2.2.4	Can you explain that changes in understanding of the nature of matter need to be evaluated through peer review and validated by the scientific community?	<input type="checkbox"/>