

- 12 (a)** Electromagnetic radiation of a single constant frequency is incident on a metal surface. This causes an electron to be emitted.

Explain why the maximum kinetic energy of the electron is independent of the intensity of the incident radiation.

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..... [3]

- (b)** Ultraviolet radiation of wavelength 250 nm is incident on the surface of a sheet of zinc. The maximum kinetic energy of the emitted electrons is 1.4 eV.

Determine, in eV:

- (i)** the energy of a photon of the ultraviolet radiation

energy = eV [3]

- (ii)** the work function energy of the surface of the zinc.

energy = eV [2]

[Total: 8]

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