

- 6 (a) Explain what is meant by a *photon* of electromagnetic radiation.

.....
.....
..... [2]

- (b) The photoelectric effect provides evidence for the particulate nature of electromagnetic radiation. State three experimental observations that support this conclusion.

1.
.....
.....
2.
.....
.....
3.
..... [3]

- (c) Electromagnetic radiation of wavelength λ and intensity I , when incident on a metal surface, causes n electrons to be ejected per unit time. The maximum kinetic energy of the electrons is E_{\max} .

State and explain the effect, if any, on n and E_{\max} when

- (i) the intensity is reduced to $\frac{1}{2} I$ but the wavelength λ is unchanged,

.....
.....
.....

- (ii) the wavelength λ is reduced but the intensity I is not changed.

.....
.....
.....

[4]

