

- 10 (a) Describe the *photoelectric effect*.

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

[2]

- (b) Data for the work function energy Φ of two metals are shown in Fig. 10.1.

	Φ/J
sodium	3.8×10^{-19}
zinc	5.8×10^{-19}

Fig. 10.1

Light of wavelength 420 nm is incident on the surface of each of the metals.

- (i) State what is meant by a *photon*.

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

[2]

- (ii) Calculate the energy of a photon of the incident light.

$$\text{energy} = \dots \text{ J} [2]$$

- (iii) State whether photoelectric emission will occur from each of the metals.

sodium:

zinc:

[1]

[Total: 7]