

7 Explain the following phenomena.

- (a) When ultraviolet light is incident on the surface of a zinc plate, electrons are ejected but none are ejected when the plate is illuminated with red light.

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..... [2]

- (b) A strontium-90 source emitting high-energy  $\beta$ -particles is placed in an aluminium container. Although the  $\beta$ -particles are absorbed, X-ray radiation is emitted from the container walls.

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..... [3]

- (c) In the  $\alpha$ -particle scattering experiment, only a small proportion of the  $\alpha$ -particles incident on the metal foil are deflected through angles greater than  $90^\circ$ .

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..... [3]

