



Oxford Cambridge and RSA

GCSE Physics B (Twenty First Century Science)

J259/01 Breadth in Physics (Foundation Tier)

Question Set 40

1

Ultraviolet radiation can be used to disinfect water.

Fig. 1.1 shows an ultraviolet disinfection unit.

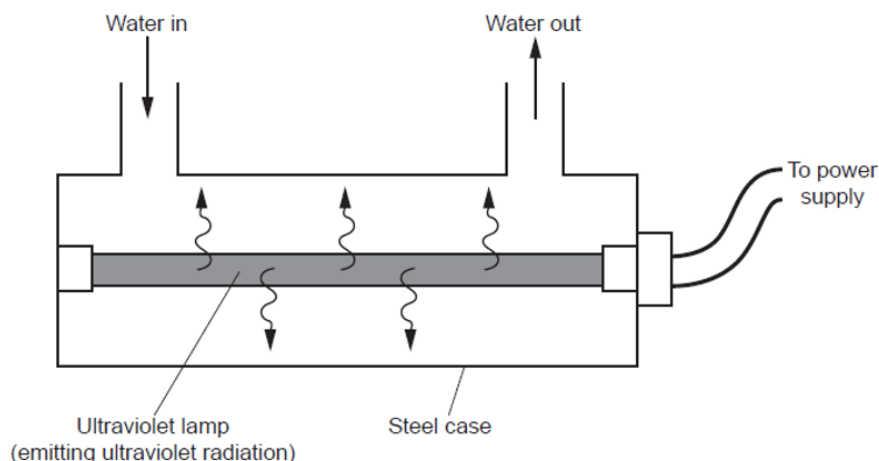


Fig. 1.1

- (a) Ultraviolet radiation is emitted by the atoms in the ultraviolet lamp.

Describe how changes in atoms can generate ultraviolet radiation

[2]

Electrons change energy levels

- (b) Ultraviolet disinfection works because ultraviolet radiation harms micro-organisms in the water.

- (i) Explain why ultraviolet radiation is also harmful to living organisms, including humans.

It is ionising and can cause harmful mutations

[2]

- (ii) Suggest how the design of the disinfection unit in Fig. 1.1 prevents it from harming humans.

It is enclosed in a steel case

[1]

- (c) Alpha radiation is also harmful to living organisms.

Give **two** reasons why alpha radiation would not be suitable for disinfecting water.

[2]

It isn't penetrating enough and is riskier to handle

Total Marks for Question Set 40: 7

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