

GCSE Physics B (Twenty First Century Science)
J259/03 Depth in physics (Higher Tier)

Question Set 29

1 Ultraviolet radiation can be used to disinfect water.

Fig. 3.1 shows an ultraviolet disinfection unit.

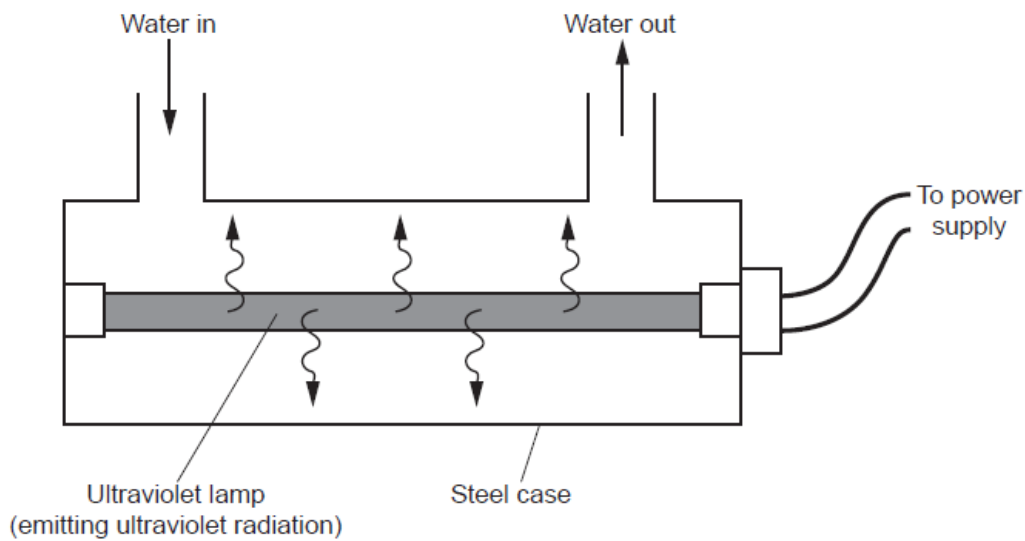


Fig. 3.1

- (a) Ultraviolet radiation is emitted by the atoms in the ultraviolet lamp.
Describe how changes in atoms can generate ultraviolet radiation. [2]
- (b) Ultraviolet disinfection works because ultraviolet radiation harms micro-organisms in the water. [2]
- (i) Explain why ultraviolet radiation is also harmful to living organisms, including humans. [2]
- (ii) Suggest how the design of the disinfection unit in Fig. 3.1 prevents it from harming humans. [1]
- (c) Alpha radiation is also harmful to living organisms.
Give **two** reasons why alpha radiation would not be suitable for disinfecting water. [2]

Total Marks for Question Set 29: 7

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