

Mark schemes

Q1.

- (a) nuclei 1
 neutrons 1
 gamma rays
this order only 1

- (b) energy = power \times time
or
 $E = P \times t$ 1

- (c) $P = 500\,000\,000\text{ (W)}$ 1

$$E = 500\,000\,000 \times 3600$$

allow a correct substitution of an incorrectly / not converted value of P 1

$$E = 1\,800\,000\,000\,000\text{ (J)}$$

or
 $E = 1.8 \times 10^{12}\text{ (J)}$
allow an answer consistent with an incorrectly / not converted value of P 1

- (d) any **one** from:
 • bury the radioactive waste
 • put the radioactive waste in cooling ponds
allow store it for (at least) one half-life
 • transport the radioactive waste in secure vessels
 • store the radioactive waste in metal containers
 • cover the radioactive waste in concrete
ignore references to high / medium / low level waste
ignore label the waste as hazardous 1

- (e)
 number of days = $\frac{92}{100} \times 365$ 1

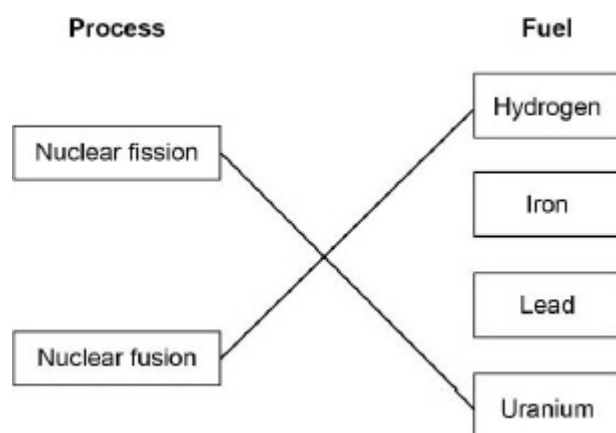
$$\text{number of days} = 335.8$$

allow answers of 335 and 336 days
allow an answer of 29.2 (days) for 1 mark 1

[10]

Q2.

(a)



1 mark for each correct line

additional line from a box on the left negates the mark for that box

2

[2]