

- 7 A polonium nucleus $^{210}_{84}\text{Po}$ is radioactive and decays with the emission of an α -particle. The nuclear reaction for this decay is given by



(a) (i) State the values of W

X

Y

Z

[2]

(ii) Explain why mass seems not to be conserved in the reaction.

.....
..... [2]

(b) The reaction is spontaneous. Explain the meaning of *spontaneous*.

.....
..... [1]

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