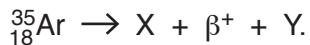


- 7 (a) The decay of a nucleus  $^{35}_{18}\text{Ar}$  by  $\beta^+$  emission is represented by



A nucleus X and two particles,  $\beta^+$  and Y, are produced by the decay.

State:

- (i) the proton number and the nucleon number of nucleus X

proton number = .....

nucleon number = .....

[1]

- (ii) the name of the particle represented by the symbol Y.

..... [1]

- (b) A hadron consists of two down quarks and one strange quark.

Determine, in terms of the elementary charge  $e$ , the charge of this hadron.

charge = ..... [2]

[Total: 4]

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