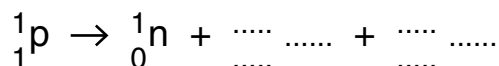


- 6 (a) State **one** difference between a hadron and a lepton.

.....
[1]

- (b) A proton within a nucleus decays to form a neutron and two other particles. A partial equation to represent this decay is



- (i) Complete the equation. [2]

- (ii) State the name of the interaction or force that gives rise to this decay.

.....[1]

- (iii) State three quantities that are conserved in the decay.

1.

2.

3.

[3]

- (c) the quark composition of a proton to show that it has a charge of $+e$, where e is the elementary charge.

Explain your working.

[3]

[Total: 10]