

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

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

(b) (i) State the quark composition of a proton and of a neutron.

proton:

neutron:

[2]

(ii) your answer in (i) to determine the quark composition of an α -particle.

quark composition:[1]

(c) The results of the α -particle scattering experiment provide evidence for the structure of the atom.

result 1: The vast majority of α -particles pass straight through the metal foil or are deviated by small angles.

result 2: A very small minority of α -particles are scattered through angles greater than 90° .

State what may be inferred from

(i) result 1,

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

(ii) result 2.

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