

Answer ALL questions.

- 1**
- (a) The table gives some properties of different types of radiation.

Type of radiation	Nature	Relative charge	Ionising ability
alpha (α)	helium nucleus		high
beta (β)		-1	medium
gamma (γ)	electromagnetic wave	0	low

- (i) Complete the table by giving the two missing properties.

(2)

- (ii) Which type of radiation from the table has the lowest penetrating power?

(1)

- (iii) Which types of radiation from the table can be completely absorbed by 5 mm of aluminium?

(1)

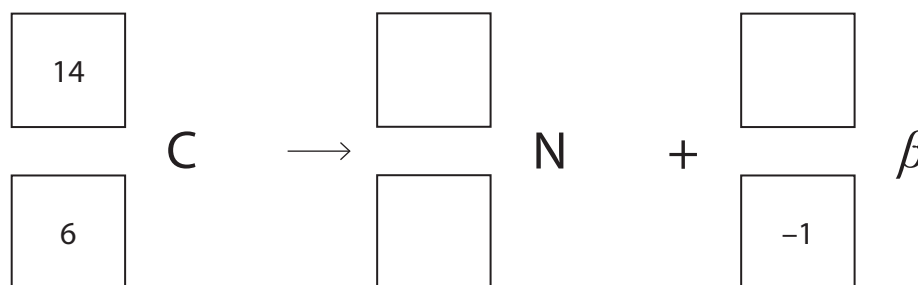
..... and

- (b) Carbon-14 is a radioactive isotope of carbon.

It decays by beta emission to form an isotope of nitrogen.

Complete the nuclear equation for the decay of carbon-14.

(2)

**(Total for Question 1 = 6 marks)**