Oxford Cambridge and RSA

GCSE Physics B (Twenty First Century Science)

J259/02 Depth in physics (Foundation Tier)

Question Set 24

1 Nuclear Physicists use atomic numbers and mass numbers to identify isotopes.

The table shows data on three atoms, **Atom A**, **Atom B**, and **Atom C**.

	Atom A	Atom B	Atom C
Atomic number	6	6	.....
Mass number	12	14	14
Number of neutrons	.....	8	7
Stable	Yes	No	Yes

(a) Complete the **two** missing values in the table.

[1]

(b) Isotopes of an element are atoms with the same number of protons but a different number of neutrons.

Which **two** atoms are isotopes of the same element?

Put a (ring) around the **two** correct answers.

Atom A **Atom B** **Atom C** **[1]**

(c) Carbon-14 is an unstable isotope which decays to nitrogen-14.

$$^{14}_{6}C \rightarrow {}^{14}_{7}N + \text{Decay particle}$$

What is the decay particle emitted when carbon-14 decays?

Put a (ring) around the correct answer.

Alpha particle **Beta particle** **Gamma ray** **Neutron** **[1]**

Total Marks for Question Set 24: 3

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