

The Nuclear Model of the Atom

Question Paper

Course	CIE IGCSE Physics
Section	5. Nuclear Physics
Topic	The Nuclear Model of the Atom
Difficulty	Easy

Time Allowed	10
Score	/5
Percentage	/100

Question 1

Hydrogen is an element with one proton. It has three different isotopes.

Which statement about the three Hydrogen isotopes is correct?

- A. They must have different numbers of electrons orbiting their nucleus.
- B. They must all have one proton in their nuclei.
- C. They must all have one neutron in their nuclei.
- D. They must all have the same number of nucleons in their nucleus.

[1 mark]

Question 2

The nuclide notation for a generic element is given below:



Which of the following is the correct definition of each of the terms?

	X	A	Z
A	symbol	nucleon number	proton number
B	symbol	proton number	nucleon number
C	symbol	neutron number	proton number
D	nucleon number	proton number	neutron number

[1 mark]

Question 3

An atom consists of electrons orbiting a nucleus. The nucleus contains protons and neutrons.

For the atom to be neutral, which statement about the atom **must** be correct?

- A. The number of electrons is equal to the number of protons.
- B. The number of protons is equal to the number of neutrons.
- C. The number of electrons, protons and neutrons are all different.
- D. The number of electrons is equal to the number of neutrons.

[1 mark]

Question 4

The charge on an electron is $-e$.

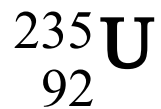
Which answer below correctly describes the charge of a proton and the charge on a neutron?

	Proton	Neutron
A	0	$+e$
B	$+e$	$-e$
C	$+e$	0
D	$-e$	$+e$

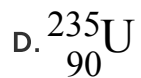
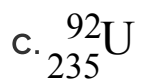
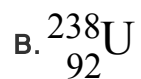
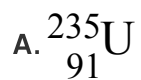
[1 mark]

Question 5

An isotope of uranium is represented by the symbol:



Which of the answers below could be a different isotope of uranium?



[1 mark]