

The Nuclear Atom

Question Paper 2

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	The Nuclear Atom
Booklet	Question Paper 2

Time allowed: 14 minutes

Score: /11

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

Question 1

A radioactive nucleus contains 128 nucleons. It emits a β -particle.

How many nucleons are now in the nucleus?

- A 124 B 127 C 128 D 129

Question 2

A nuclide has the symbol ${}^{14}_6\text{C}$.

How many protons are there in one nucleus of this nuclide?

A 6

B 8

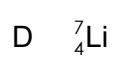
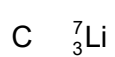
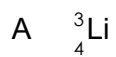
C 14

D 20

Question 3

A lithium nucleus contains 3 protons and 4 neutrons.

What is its nuclide notation?



Question 4

A particular nuclide of chlorine can be represented by the symbol shown.



How many electrons are there in a neutral atom of this nuclide?

- A 17 B 20 C 37 D 54

Question 5

A nuclide is represented by the symbol P_QX .

How many neutrons are in one nucleus of the nuclide?

A P

B Q

C P + Q

D P - Q

Question 6

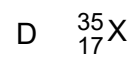
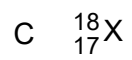
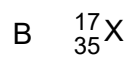
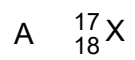
Which statement about the nuclei of all atoms is correct?

- A. They are very small compared with the size of the atoms.
- B. They always contain the same number of protons as neutrons.
- C. They contain electrons, neutrons and protons.
- D. They have a total charge of zero.

Question 7

A nucleus X has 17 protons and 18 neutrons.

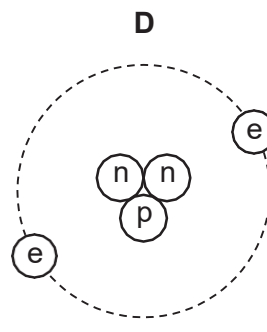
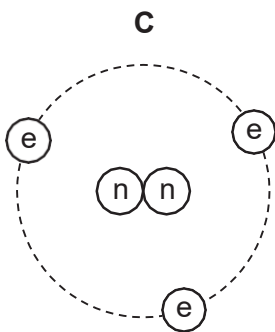
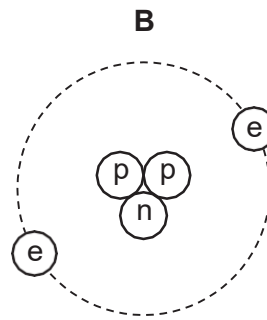
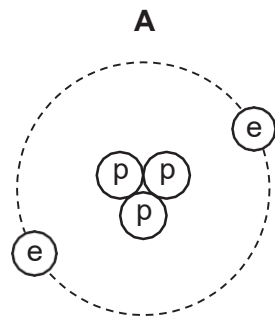
Which notation is correct for this nucleus?




Question 8


A nucleus of helium has the symbol ${}^3_2\text{He}$.


Which diagram represents an atom of ${}^3_2\text{He}$?



key

 = proton

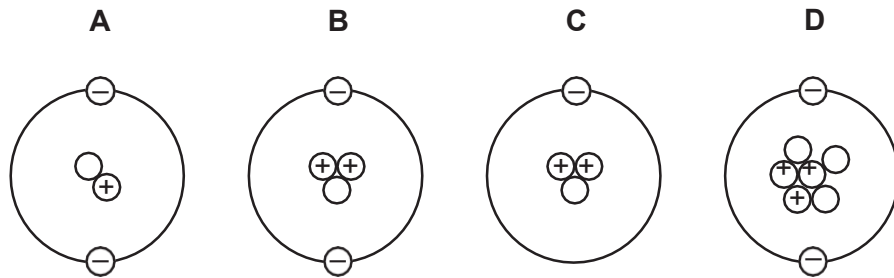
 = neutron

 = electron

Question 9

Which diagram could represent the structure of a neutral atom?

A **B** **C** **D**

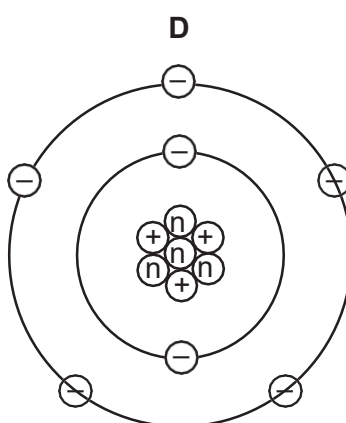
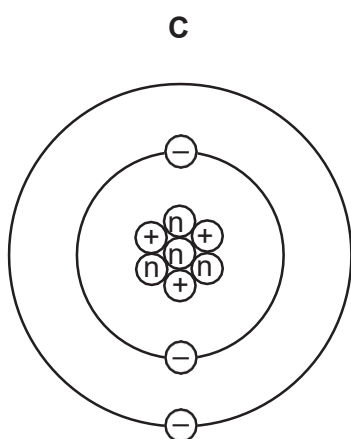
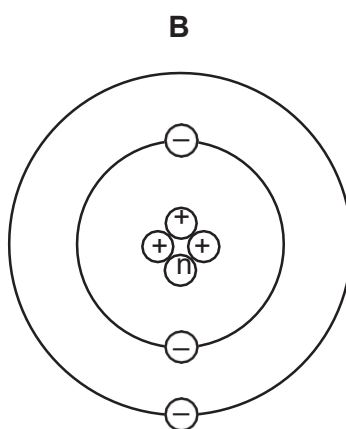
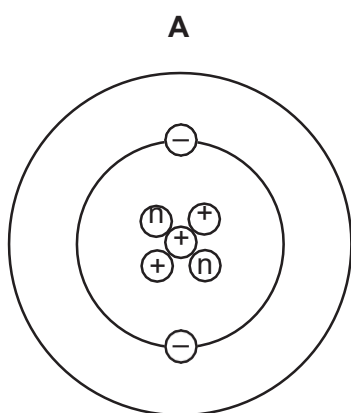


key
○ neutron
⊕ proton
⊖ electron

Question 10

An atom of the element lithium has a nucleon number of 7 and a proton number of 3.

Which diagram represents a neutral atom of lithium?



key

Ⓝ = a neutron

⊕ = a proton

⊖ = an electron

(not to scale)

Question 11

A nuclide of substance X has the symbol ${}_{12}^{26}\text{X}$.

How many electrons are there in a neutral atom of substance X?

- A 12 B 14 C 26 D 38