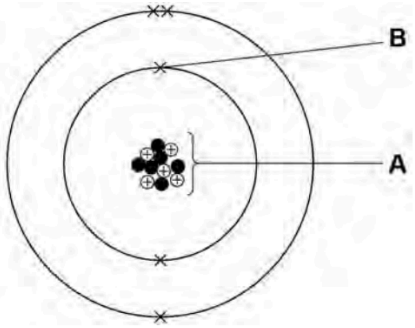
(A simple model of the atom (protons, neutrons, electrons))

Q1.a) (2019)

This question is about atomic structure.

Figure 1 represents an atom of element **Z**.

Figure 1



Name the parts of the atom labelled **A** and **B**.

Choose answers from the box.

[2 marks]

electron	**neutron**	**nucleus**	**proton**

A _____

B _____

Q1.b) (2019)

Which particle has the lowest mass?

Choose the answer from the box.

[1 mark]

electron	**neutron**	**nucleus**	**proton**

_____

Q1.c) (2019)

Which group of the periodic table contains element **Z**?

Use **Figure 1**.

[1 mark]

Group _____

Q1.d) (2019)

Give the atomic number and the mass number of element **Z**.

Use **Figure 1**.

Choose answers from the box.

[2 marks]

1	**5**	**6**	**11**	**16**

Atomic number _____

Mass number _____

Q2. (2020)

This question is about models of the atom.

Atoms were first thought to be tiny spheres that could not be divided.

Which particle was discovered to change this model of the atom?

[1 mark]

Tick (✓) **one** box.

Electron ☐

Neutron ☐

Proton ☐

Q3. (2020)

The model of the atom used today has three subatomic particles:

- electrons
- neutrons
- protons.

Complete the sentences.

[3 marks]

Atoms of the same element have the same atomic number because they have the same number of _____.

Atoms of the same element can have different mass numbers because they have different numbers of _____.

Atoms have no overall charge because they have the same number of _____ and _____.

Q4. (2021)

Gallium (Ga) is in Group 3 of the modern periodic table.

Give the numbers of electrons and neutrons in an atom of the isotope $^{69}_{31}Ga$

[2 marks]

Number of electrons _____

Number of neutrons _____

Q5.(2021)

What is the most likely formula of a gallium ion?

[1 mark]

Tick (✓) **one** box.

- Ga^{+} ☐
- Ga^{-} ☐
- Ga^{3+} ☐
- Ga^{3-} ☐

Q6.(2021)

Gallium was discovered six years after Mendeleev published his periodic table.

Give **two** reasons why the discovery of gallium helped Mendeleev's periodic table to become accepted.

[2 marks]

1 _____

_____

2 _____

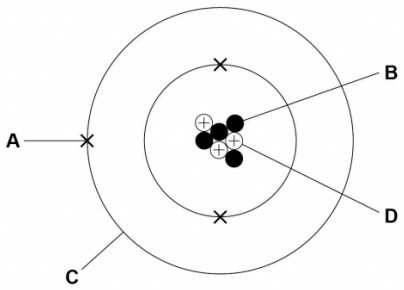
_____

Q7.(2022)

This question is about atoms.

Figure 1 represents an atom of an element.

Figure 1



Draw **one** line from each name to the correct label.

[2 marks]

Name	Label
	A
Neutron	B
Proton	C
	D

Q8.(2022)

An atom of element **Y** has:

- an atomic number of 9
- a mass number of 19.

Give the number of electrons and the number of neutrons in this atom.

Choose answers from the box.

[2 marks]

1	**9**	**10**	**19**	**28**

Number of electrons _____

Number of neutrons _____

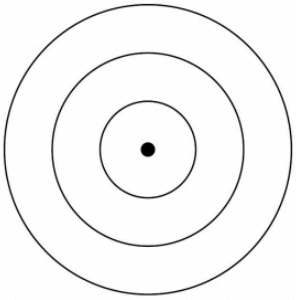
Q9.(2022)

Complete **Figure 16** to show the electronic structure of an aluminium atom.

Use the periodic table.

[1 mark]

Figure 16



Q10.(2022)

An atom of element **Z** contains:

- 3 electrons
- 4 neutrons
- 3 protons.

Give the name of element **Z**.

Use the periodic table.

[1 mark]

_____

Q11.(2023)

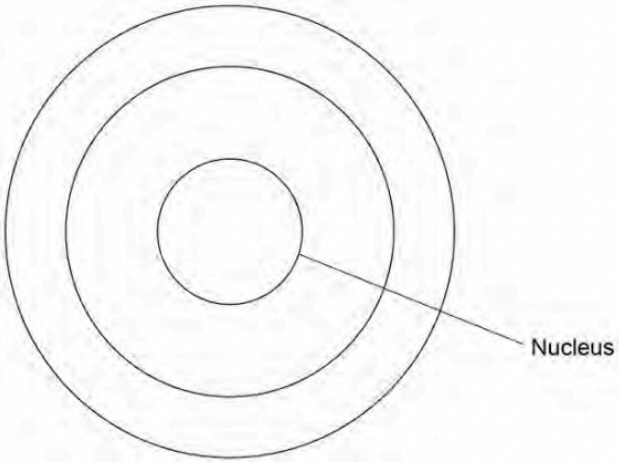
Complete **Figure 1** to show the position of the particles in an atom of element **Z**.

Use the symbols:

× = electron
● = neutron
○ = proton

[4 marks]

Figure 1



Q12.a) (2024)

This question is about carbon and carbon compounds.

An atom of carbon is represented as:

(Mass number) 13
(Atomic number) 6
C

What is the number of protons in this atom of carbon?

Tick (✓) **one** box.

[1 mark]

1 ☐ 6 ☐ 7 ☐ 13 ☐

Q12.b) (2024)

What is the number of neutrons in this atom of carbon?

Tick (✓) **one** box.

[1 mark]

1 ☐ 6 ☐ 7 ☐ 13 ☐

Q12.c) (2024)

What is the number of electrons in this atom of carbon?

Tick (✓) **one** box.

[1 mark]

1 ☐ 6 ☐ 7 ☐ 13 ☐