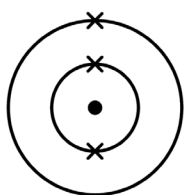


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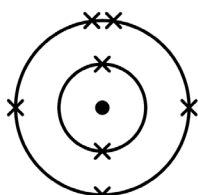
Class:



The diagrams show the electronic structure of four different atoms.



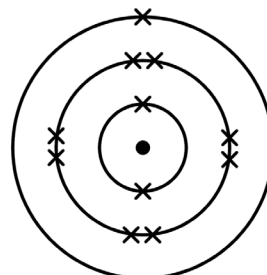
Atom A



Atom B



Atom C



Atom D

i. Name the two sub-atomic particles in the nucleus of an atom.

Protons and neutrons

ii. Why is there no overall electrical charge on each atom?

The number of protons and electrons are equal. Or the positive charge is equal to the negative charge.

iii. Why is Atom C unreactive?

It has a full outer shell of electrons.

iv. Which two of these atoms have similar chemical properties?

Give a reason for your answer.

Atoms A and D have similar chemical properties.

Reason: as they have the same number of electrons in their outer shells.

Describe a test to show that a gas is chlorine.

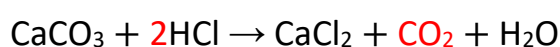
Test: moist/damp blue litmus paper.

Positive result: if the gas is chlorine the damp blue litmus paper will turn red and is then bleached white.

Calculate the relative formula mass (M_r) of $\text{Al}(\text{NO}_3)_3 \cdot 7\text{H}_2\text{O}$

$$27 + 3(14) + 9(16) + 7(18) = 339$$

Balance the chemical equation for the reaction of calcium carbonate with hydrochloric acid.



Name a Noble gas.

Accept any correct Noble gas.

Give the electronic configuration of a calcium **atom**.

2, 8, 8, 2