1 The figure below shows the atomic symbol of element X:

15

X

7

Which of the following is the correct electron configuration for element X?

**(a) 2 , 5**

(b) 2 , 6

(c) 2 , 7

(d) 2 , 8 , 5

2 The table below shows information about particles A and B

|  |  |  |
| --- | --- | --- |
| Particle | Proton number | Electron arrangement |
| A | 11 | 2 , 8 |
| B | 19 | 2 , 8 , 8 |

Based on the information provided, A and B are:

**(a) positive ions**

(b) negative ions

(c) noble gases

(d) isotopes of the same element

3 The formula of a chloride salt of M is MCl2. What is the formula of a sulphate salt of M?

**(a) MSO4**

(b) M2SO4

(c) M(SO4)2

(d) It is not possible to get a sulfate salt of M

4 Which of the following lists contains only heterogeneous mixtures?

(a) air, hydrochloric acid, salt water

(b) copper(II) sulfate, tap water, sugar solution

(c) neon, gold, chlorine

**(d) fruit cake, concrete, sandy seawater**

**Question 29 (3 marks)**

Complete the table below by writing the electron configuration of the atoms or ionslisted.

|  |  |
| --- | --- |
| **Atom or ion** | **Electron configuration** |
| A sulfur atom | 1s22s22p63s23p4 |
| The 2+ charged ion of the element in group 14, period 3 | 1s22s22p63s2 |
| An isotope of nitrogen whose nucleus contains 8 neutrons | 1s22s22p3 |

**Question 30 (4 marks)**

Iron exists as four naturally occurring isotopes. Considering the lightest of these, 54Fe:

How many neutrons are there in an atom of this isotope? (1 mark)

28 neutrons

What is the mass number of this isotope? (1 mark)

54

Carbon forms numerous oxides and ions containing oxygen, such as CO, CO2 and CO32-.

(c)

How many protons are there in a molecule of CO2? (1 mark)

22

(d)

How many electrons are there in a carbonate ion (CO32-)? (1 mark)

32

Mistakes:

* Write in subshell format, do not include commas
* Nitrogen has 5 electrons
* A negative ion gains electrons