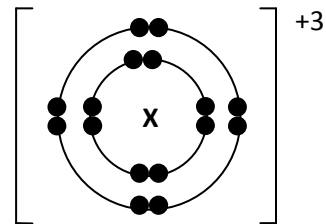




Chemical bonds

01. In the Periodic table, what is the location of the element that forms the ion X^{3+} shown in the diagram,

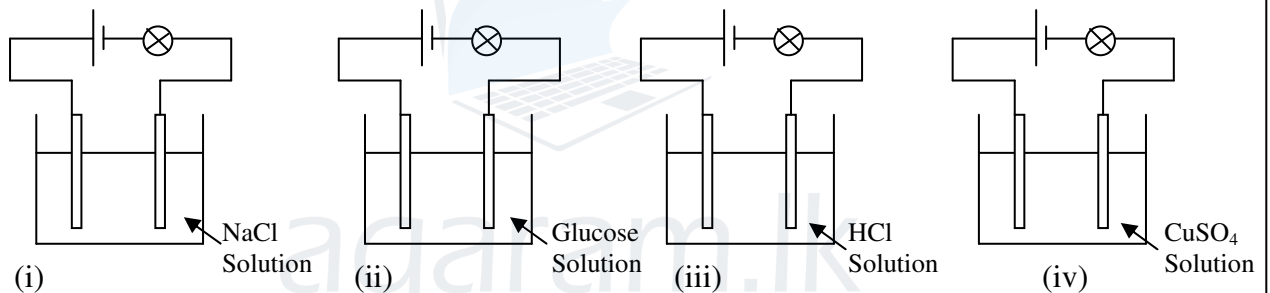
- Period 2 & Group III
- Period 3 & Group III
- Period 3 & Group V
- Period 4 & Group III



02. A characteristic of an ionic compound is,

- high melting point
- exists in the gaseous state
- low boiling point
- do not conduct electricity

03. In which of the following setup, the bulb does not light?

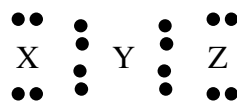


04. Unique characteristic of an atom of element or an ion is

- Number of protons
- Number of neutrons
- Number of electrons
- Electronic configuration

05. Shown below is a covalent bond formed by X & Y atoms of the two elements. The valencies of X & Y are

- 1, 4
- 2, 4
- 4, 2
- 2, 2

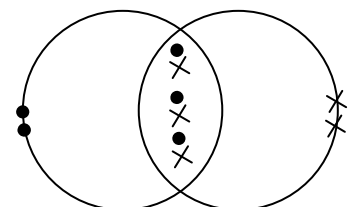


06. The ion with the electronic configuration of Ne is

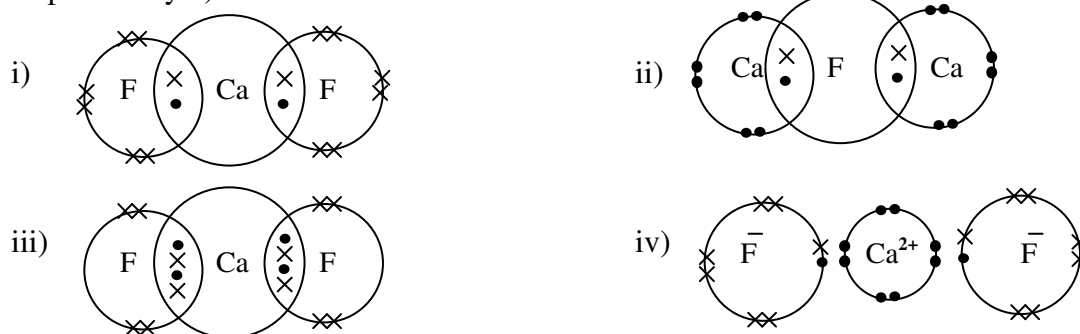
- S^{-2}
- K^{+}
- Ca^{+2}
- Na^{+}

07. The bond of the Nitrogen molecule is shown with dots & crosses in the diagram given below. How many lone pairs of electrons are in the nitrogen molecule?

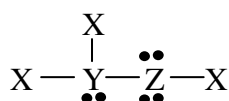
- 1
- 2
- 3
- 4



08. The atomic number of fluorine & calcium are 9 & 20 respectively. Which of the following figure represents the electron arrangement of calcium fluoride formed by the combination of calcium & fluorine? (An electron from calcium is represented by ● whereas an electron from fluorine is represent by x)



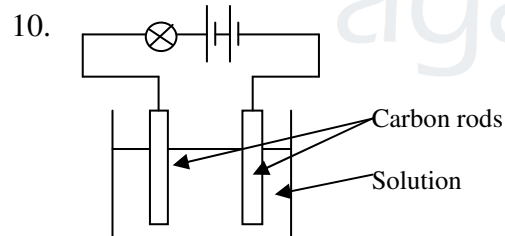
09. The structural formula of a compound formed by three elements as follows



The element X, Y, & Z in this respectively can be

- i) H, N & O ii) H, O & N iii) N, H & O iv) O, N & H

10. Select the Lewis structure of Carbon dioxide



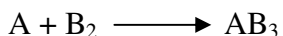
According to the experiment given above select the correct answer from the table given below.

Solution	Where the bulb illuminates or not	Nature of the bonds of the solution
i. Distilled water	Illuminate	Co-valent bond
ii. Salt solution	Illuminate	Ionic bond
iii. Sugar solution	Do not illuminate	Ionic bond
iv. Ethyl alcohol	illuminate	Co-valent bonds

Structured Essay

01. A) Given below is a chemical reaction

Symbols given are not real



i) What is the valence of A?

.....

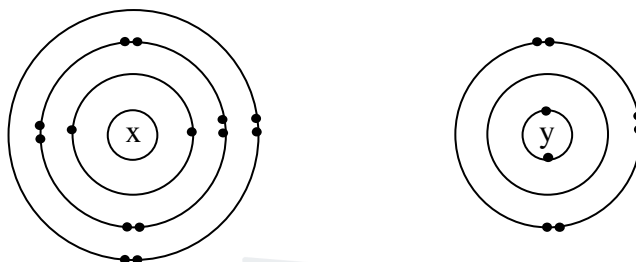
ii) What is the gaseous element given in the above reaction?

.....

iii) What is the metal element out of A & B?

.....

iv) Following diagrams show the structures of X & Y atoms



a) What is the element with highest electronegativity.

.....

b) What is the type of bond from between X & Y?

.....

c) Write the chemical formula of the compound formed by X & Y

.....

d) Draw the dot-cross diagram & Lewi's structure of the above compound.

.....

Essay

02) Salt is used as a food preservative

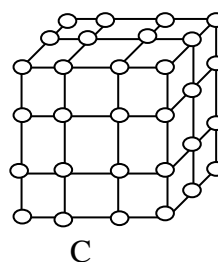
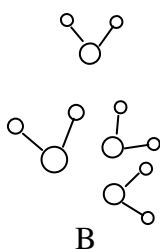
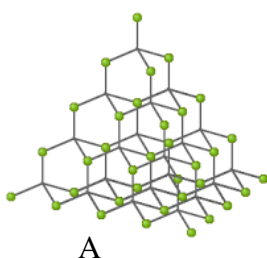
i) What is the group of periodic table and the ion made by the metallic element which is in the normal table salt?

ii) Draw the diagram of ion formed by non-metal of the common salt

iii) What is the type of bond exists in atoms of salt.

iv) Write 2 properties of compounds with above mentioned bonds.

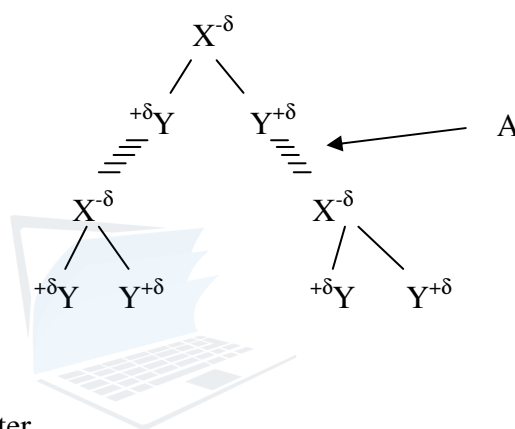
B) Answer the following questions based on the particular structure of few substances.



Write the letter/letters corresponding to each of following.

- i) The compound with highest boiling point
 - ii) The compound that conduct electricity in the molten fuses state
 - iii) Two compounds which are most likely to form a solution when mixed.
 - iv) The compound which exists as liquid at room temperature.
- 03) i) Draw a diagram to investigate the nature of bonds in water by using LED bulbs, dry cells, beakers, carbon rods and connecting wires, distilled water
- ii) What is the observation of the above set up?
 - iii) Draw lewi's structure of a water molecule

The water molecules have angular shape as given below



- iv) What is denote by (A) in water
- v) Write 3 properties of water gained due to the bonds named as (A)

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