Ionic Bonding 1

Name: _____

Exercise:

The Calcium Element

Calcium is a soft and gray metal. When it burns, it gives a red yellow flame. Calcium is used in industry as calcium chloride compound for the manufacture of glass and for the protection of concrete against freezing.

1- The nucleus of calcium atom is symbolized by $^{40}_{20}Ca$.
In the table below (document 1), only one of the answers to each question is correct.
Click to choose the correct answer corresponding to each question then **type a justification** for each question.

	Questions	Answers		
		a	b	c
1.1	The nucleus of calcium atom contains	20 protons and 40 neutrons	20 protons and 20 neutrons	40 protons and 20 neutrons
	Justification:			
1.2	The electron configuration of this atom is	$K^2L^8M^8$	$K^2M^8L^8N^2$	$K^2L^8M^8N^2$
	Justification:			
1.3	The number of valence electrons of this atom is	3	2	4
	Justification:			
1.4	The Lewis electron dot symbol is	·Ca	Ca	:Ca:
	Justification:			
1.5	The valence of this atom is	4	1	2
	Justification:			

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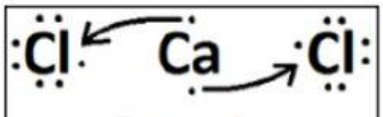
2- The two elements Calcium (Ca) and chlorine (Cl) react together to form Calcium chloride compound.

Document-2 shows the transfer of electrons between the calcium and chlorine atoms during the bond formation in calcium chloride.



Documnet 2

2.1. Identify the nature of chemical bond in calcium chloride compound.

2.2. Explain the bond formation in calcium chloride.

2.3. Click to choose the correct formula unit that corresponds to calcium chloride.

a- CaCl b- $CaCl_2$ c- Cl_2Ca

3- Extract from the text uses of calcium in industry.

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