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Chapter:- 3. ATOMS AND MOLECULES.

CLASS:- IXth

SUBTEACHER:-VIKASH KR. RAJAK

SUBJECT:-CHEMISTRY

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Topic:- Symbol of Elements.

➤ **SYMBOLS OF ELEMENTS:-**

A 'symbol' is a thing (like a 'sketch' or 'letter', etc.) which represents or stands for something else. When we say 'the symbols of elements', it means 'the symbols of the atoms of the elements' (because elements are made up of atoms).

➤ **Dalton's Symbols of Elements:-**

Dalton was the first scientist to use the symbols to represent elements in a short way. Dalton's symbol for an element represented the 'element' as well as 'one atom' of that element. Some of the symbols of elements given by Dalton are shown below:

Element	Dalton's symbol	Element	Dalton's symbol
Hydrogen		Iron	
Carbon		Copper	
Oxygen		Silver	
Phosphorus		Gold	
Sulphur		Lead	
Platinum		Mercury	

Dalton's symbols for elements were difficult to draw and inconvenient to use. Dalton's symbols are only of historical importance. They are not used at all. J.J. Berzelius of Sweden who proposed that the first letter (or the first letter and another letter) of the name of an element be used as its symbol. This idea led to the modern symbols of elements which are described below.

☞ Modern Symbols of Elements:-

Each element is represented by a separate symbol. The symbol of an element is the “first letter” or the “first letter and another letter” of the English name or Latin name of the element.

Example:- The symbol of Hydrogen is H (First letter of name).

In case of hydrogen and oxygen, the first letters of their English names are taken as their symbols. There are, however, some elements whose names begin with the same letter. The names of elements Carbon, Calcium, Chlorine and Copper, all begin with the same letter C. In such cases, one of the elements is given a “one letter” symbol but all other elements are given “two letter” symbols. The “two letters” are the “first letter” and “another letter” of the English name or Latin name of the element.

⇒ **Note:-** The “another letter” may or may not be the “second letter” of the name.

The symbol of Carbon is C (First letter of name)

The symbol of Calcium is Ca (First and second letter of name)

The symbol of Chlorine is Cl (First and third letter of name)

The symbol of Copper is Cu (First and second letter of its Latin name Cuprum)

It should be noted that in a ‘two letter’ symbol, the first letter is the ‘capital letter’ but the second letter is the ‘small letter’. The chemical symbols of some of the important elements derived from their English names are given below:

Symbols Derived from English Names of the Elements

<i>English name of the element</i>	<i>Symbol</i>	<i>English name of the element</i>	<i>Symbol</i>
1. Hydrogen	H	14. Sulphur	S
2. Helium	He	15. Chlorine	Cl
3. Lithium	Li	16. Argon	Ar
4. Boron	B	17. Calcium	Ca
5. Carbon	C	18. Manganese	Mn
6. Nitrogen	N	19. Nickel	Ni
7. Oxygen	O	20. Zinc	Zn
8. Fluorine	F	21. Bromine	Br
9. Neon	Ne	22. Krypton	Kr
10. Magnesium	Mg	23. Iodine	I
11. Aluminium	Al	24. Barium	Ba
12. Silicon	Si	25. Cobalt	Co
13. Phosphorus	P	26. Uranium	U

📝 Home Work (Based on study material of 30-05-20)

Answer the following questions:-

1. What is Atom?
2. What is Atomic Radius?
3. What is atomic radius of Hydrogen atom?
4. What is the full form of STM?

