

9. CLASSIFICATION OF ELEMENTS – THE PERIODIC TABLE**4 Marks Questions:**

1. Read the following table and answer the questions given below.

Group No->	IA	IIA	IIIA	IVA	VA	VIA	VIIA	VIIIA
Period No.	1	2	13	14	15	16	17	18
2	A		D			F	Y	
3		B			E			T
4			G			Q	P	

- Identify the Nobel gas from the given table.
 - Write the element which belongs to 4th period
 - Identify the element, which belongs to 15th Group and 3rd Period from the given table.
 - Identify the element, which having two outermost electrons.
2. Name the following.
- The first element of the Periodic Table.
 - The horizontal rows in the Periodic table are given this term.
 - The distance between the centre of the nucleus of atom and its valence shell.
 - The elements belong to '4f' Block.

3. Study the given table and answer the questions given below.

Atomic No.	3	4	5	6	7	8	9	10	11	12
Element	A	B	C	D	F	G	H	I	J	K

- The element which contains 3 valence electrons
 - The element electronic configuration 2, 6
 - The element which belongs to Halogen group.
 - An alkali metal
4. How position of element in the periodic table helps to predict their chemical properties. Explain with an example?
5. Which element has?
- Two shells, both of which are completely filled with electrons?
 - The electronic configuration of 2, 8, 2?
 - A total of two shells, with three electrons in its valence shell?
 - Twice as many electrons in its second shell as in its first shell?

2 Marks Questions:

1. An atom has electronic configuration 2, 8, 7.

- What is the atomic number of this element?
- To which of the following elements would it be chemically similar.
N (7), F (9), P (15), Ar (18)

- Nitrogen (atomic number 7) and phosphorus (atomic number 15) belong to group 15 of the periodic table. Write the electronic configuration of these two elements. Which of these will be more electronegative? Why?
- Name two elements that you would expect to have chemical properties similar to Mg. What is the basis for your choice?
- Correct the following statements and rewrite.
 - According to modern periodic Law, Physical and Chemical properties of the elements are the periodic functions of their atomic weights
 - According to Dobereiner law of triads, the average atomic number of first and last elements, is equal to the atomic number of middle number.
- Based on the modern periodic table, state the group number and period number of each element given in the table below. (AS-2)

Element	Group Number	Period Number
1. Sulphur		
2. Magnesium		

- Two elements X and Y have atomic numbers 12 and 16 respectively. Write the electronic configuration for these elements. To which period of the modern periodic table do these two elements belong? What type of bond will be formed between them and why?
- Li, Na and K are the elements of a Dobereiner triad. If atomic mass of Li is 7 and that of K is 39. What would be the atomic mass of Na?
- An element X belongs to 3rd period and Group-2 of the modern periodic table. Then
 - What is electronic configuration of X
 - What is the valence of X
 - How many valence electrons in X
 - Write molecular formula of compound when X Combine with Chlorine.

1 Mark Questions:

- Besides gallium, which other elements have been left by Mendeleev in his periodic table, since the time they were discovered? (any two)**
Scandium, Germanium.
- Name**
 - Three elements that have a single electron in their outermost shell.**
 - Two elements that have two electrons in their outermost shell**
 - Lithium, Sodium, Potassium
 - Beryllium, Magnesium
- The present classification of elements is based on which fundamental property of elements?**
The present Classification of elements is based on the electron configuration of the element.
- Guess the Block of the element having atomic number 24.**

d-block

5. X and Y are the two elements having similar properties which obey Newlands law of octaves. How many elements are there in between X and Y.

Six elements are there in between X and Y.

6. Lithium, Sodium and Potassium were put in the same group on the basis of their similar properties. What is the similarity in their properties?

Li, Na and K are very reactive metals, which react with water with the formation of alkali and hydrogen gas.

7. State how the following periodic properties change across a period from left to right

i) Electro negativity

ii) Electron affinity

i) Electro negativity values of elements increase along a period from left to right.

ii) Electron Affinity values increase along a period from left to right.

8. Arrange the following elements according to the description given in Brackets.

i) K, Na, Li, Cs (decreasing order of their atomic radius)

ii) Mg, Na, Al, Cl, S (increasing order of their Electro negativity)

i) Cs, K, Na, Li

ii) Na, Mg, Al, S, Cl

