



**INDIAN SCHOOL DARSAIT**  
**DEPARTMENT OF CHEMISTRY**

Subject : CHEMISTRY	Topic : Periodic Classification of Elements	Date of Worksheet : 10.12.2017
Resource Person: Mrs Sandhya Jitheesh		Date :
Name of the Student : _____	Class & Division : X----	Roll Number : __

- 1 Where would you locate the element with electronic configuration 2, 8 in the modern periodic table? 1  
i) Group 8 ii) Group 2 iii) Group 18 iv) Group 10
- 2 Give reasons: ( 1 mark each)  
a. Atomic number is considered a better basis for the classification of the elements than the atomic mass  
b. Elements in the same group show the same valency?  
c. The reactivity of metals increases down the group while those of non-metals decreases down the group.  
d. Metals are called electropositive elements and non-metals called electronegative elements.
- 3 Up to which element, the law of octaves was found applicable 1  
i) Oxygen ii) Calcium iii) Cobalt iv) Potassium
- 4 Name three elements which have been discovered to fill the gaps left by Mendeleev in his periodic table? 1½
- 5 State Mendeleev's periodic law. Name the elements corresponding to eka-boron, eka-silicon and eka-aluminium. 2
- 6 What were the criteria used by Mendeleev in creating his periodic table? 2
- 7 What are Dobereiner's triads? Give an example of a triad. 2
- 8 If an element X is placed in group 14, what will be the formula and nature of bonding of its chloride? 2
- 9 State Periodic Law on which Long form of the periodic table is based. What is the number of periods and groups in this periodic table? 2
- 10 An element X has an atomic number 17. Write its electronic configuration. Predict whether this element is metallic or non-metallic. 2

- 11 The atomic radii of three elements A, B and C of a period of the periodic table are 117pm, 99pm and 104pm respectively. Giving a reason, arrange these elements in the increasing order of atomic numbers. 2
- 12 Which of the given elements A, B, C, D and E with atomic number 2, 3,7,10 and 30 respectively belong to the same period? 2
- 13 i) Among alkali metals ----- has the smallest atomic radius. 2
- ii) Among halogens ----- has the smallest atomic radius
- iii) Among elements of period three, ----- has the smallest atomic radius
- iv) In going across a period from left to right, the atomic size -----
- 14 Arrange the following elements in increasing order of their atomic radii. 2
- i) Li, Be, F, N
- ii) Cl, At, Br, I
- 15 The following table shows the position of 6 elements A, B C, D, E and F in the periodic table: 2½

Groups →	1	2	3 to 12	13	14	15	16	17	18
↓ Periods									
2	A					B			C
3		D			E				F

Using the above table answer the following questions:

- Which element will form only covalent compounds?
- Which element is metal with valency 2?
- Which element is a non-metal with valency 3?
- Out of D and E, Which one has bigger atomic radius and why?
- Write a common name for the family of elements C and F.

16 Given below is a part of the periodic table:

3

Li	Be		B	C	N	O	F
Na	Mg		Al	Si	P	S	Cl

Answer the following:

- i) What happens to the metallic character as we move horizontally from left to right?
  - ii) Which element is most metallic?
  - iii) Which element is least metallic?
- 17 Two elements X and Y have atomic numbers 12 and 16 respectively. Write the electronic configurations for these elements. To which period of the Modern periodic table do these elements belong? What type of bond will be formed between them? 3
- 18 An element 'X' belongs to group 2 and 'Y' belongs to group 15 of the periodic table. 3
- i) What is the number of valence electrons in X? What is its valency?
  - ii) What is the valency of 'Y'?
  - iii) What is the formula of the compound formed between X and Y?

**The general trends of some atomic properties in the periodic table are summarized below in tabular form.**

Atomic property	Variation from top to bottom in a group	Variation from left to right in a period
Atomic radius	Increases	Decreases
Electronegativity	Decreases	Increases
Electropositivity	Increases	Decreases
Metallic character	Increases	Decreases