



## INDIAN SCHOOL AL WADI AL KABIR

<b>Class: X</b>	<b>Department: SCIENCE 2020 – 2021</b> <b>SUBJECT : CHEMISTRY</b>	<b>Date of submission:</b> <b>16.04.2020</b>
<b>Worksheet No: 02</b>	<b>TOPIC :</b> <b>PERIODIC CLASSIFICATION OF ELEMENTS</b>	<b>Note:</b> <b>A4 FILE FORMAT</b> <b>[PORTFOLIO]</b>
<b>NAME OF THE STUDENT</b>	<b>CLASS &amp; SEC:</b>	<b>ROLL NO.</b>

### Objective type Questions (1 mark)

1. State the common characteristic of the following elements:  
Boron, Silicon, Germanium and Arsenic. [AISSE 2020]
2. State the periodic law on which Modern periodic table is based [AISSE 2020]
3. An element X with atomic number 12 forms a compound with element Y with atomic number 17. The formula of the compound formed is  
(a) XY (b) XY<sub>2</sub> (c) X<sub>2</sub>Y (d) X<sub>2</sub>Y<sub>3</sub> [AISSE 2020]
4. Give the name and electronic configuration of the alkali metal belonging to the third period.
5. What is common in the elements belonging to the same period in the periodic table?
6. State one reason for placing Mg and Ca in the same group of the periodic table.

### Intermediate level questions (2 or 3 marks)

7. List any two distinguishing features between Modern periodic table and Mendeleev's periodic table. [AISSE 2020]
8. Why is atomic number considered to be a more appropriate parameter than atomic mass for the classification of elements in a periodic table?  
How does the metallic character of elements vary as we move  
(i) from left to right in a period, and  
(ii) (ii) top to bottom in a group in the modern periodic table? Give reasons to justify your answers [AISSE 2017]
9. The atomic number of an element is 20.  
(a) Write its electronic configuration and determine its valency.  
(b) Is it a metal or a non-metal?  
(c) Write the formula of its chloride.  
(d) Is it more reactive or less reactive than Mg (atomic number 12) ? Give reason for your answer. [AISSE 2017]

10. (i) Define the following terms :  
 (a) Valency (b) Atomic size  
 (ii) How do the valency and the atomic size vary along a period ?
11. Four elements A, B, C and D have atomic numbers 12, 13, 14 and 15 respectively. Answer the following questions giving reasons.  
 i) What is the number of valence electrons and valency of D?  
 ii) Which of them will have largest atomic radii?  
 iii) Which of these elements will form the most basic oxide?

**Advanced level questions (3 or 5 marks)**


12. From the elements Li, Mg, C, S, K and Al, Identify,  
 (a) The elements belonging to the same group  
 (b) Element which has the tendency to lose two electrons  
 (c) The most metallic element  
 (d) The element that forms the metallic oxide  
 (e) The element that belongs to group 13. [AISSE 2020]
13. (a) The modern periodic table has been evolved through the early attempts of Dobereiner, Newland and Mendeleev. List one advantage and one limitation of all the three attempts.  
 (b) Name the scientist who first of all showed that atomic number of an element is a more fundamental property than its atomic mass.  
 (c) State Modern periodic law. [AISSE 2018]

14. The atomic number of elements A, B, C, D and E are given below;

Element	A	B	C	D	E
Atomic Number	7	10	12	4	19

- From the above table, answer the following questions;  
 (a) Which two elements are chemically similar?  
 (b) Which is an inert gas?  
 (c) Which element belongs to third period of the periodic table?  
 (d) Which element among these is a non-metal?
15. Na, Mg and Al are the elements having 1,2,3 electrons respectively in the outer most shell. Which of the elements:  
 (a) has the largest atomic radius?  
 (b) least reactive? Justify your answer.
16. What are the achievements of Mendeleev's Periodic table?
17. The atomic number of Cl is 17. On the basis of this information, answer the questions that follow:  
 (a) Write the electronic configuration of Cl.  
 (b) Find its valency.  
 (c) To which group and period does it belong?

18. The position of elements A, D, E, F, G, H and I in the Modern Periodic Table is given as under:

Group 	16	17	18
1	A		
2	D	E	F
3	G	H	I

- (a) In which group are inert elements placed?
- (b) What type of ions would D and E form?
- (c) How many shells would A have?
- (d) What is the similarity between E and H?
19. Given below are some elements of the modern periodic table:  ${}_4\text{Be}$ ,  ${}_9\text{F}$ ,  ${}_{14}\text{Si}$ ,  ${}_{19}\text{K}$ ,  ${}_{20}\text{Ca}$
- (a) Select the element that has one electron in the outermost shell. Write its electronic configuration.
- (b) Select two elements that belong to the same group. Give reason for your answer.
- (c) Select two elements that belong to the same period. Which one of the two has bigger atomic size?
20. Compare and contrast the arrangement of elements in Mendeleev's and the Modern periodic table.

Prepared by

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*CHECKED BY HOD - SCIENCE*