WORKSHEET 1

CHAPTER 1 – THE PERIODIC CLASSIFICATION AND PERIODIC PROPERTIES OF ELEMENTS

A. Tick (✓) the correct option.

1. How many vertical columns are there in the Periodic Table?

   a. 7 b. 16 c. 18 d. 12

2. How many electrons do we find in the outermost shell of group 2 elements?

   a. 5 electrons b. 8 electrons c. 2 electrons d. 6 electrons

3. Group 1 elements are also known as

   a. carbon family. b. alkaline metals. c. alkali metals. d. noble gases.

4. Atoms of elements belonging to the same group have same number of

   a. core electrons. b. neutrons. c. valence electrons. d. protons and neutrons.

5. On moving from left to right across a period of the Periodic Table, the atomic radius

   a. increases. b. decreases. c. remains the same. d. first increases and then decreases.

B. Fill in the blanks from the choices given within the brackets.

1. Ionization potential of alkali metals is low and _____ (increases/decreases) from top to bottom.
2. Lithium is an _____ (alkaline earth metal/alkali metal)
3. The melting point and boiling point of halogens _____ (increase/decrease) with increase in atomic number.
4. The metallic character is the tendency of an atom to _____ (gain/lose) electrons.
5. There are _____ (18/32) elements in periods 4 and 5 of the Periodic Table.

C. Name the following.

1. An element that has the highest ionization potential.
2. An element that has the least ionization potential.
3. The most electronegative element according to Pauling.
4. Longest period of the Periodic Table.
5. This group has zero electron affinity.

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

D. Match the following.

1.	High ionization energy	Francium
2.	Least ionization potential	Hg
3.	Artificial radioactive element	Na
4.	Elements with atomic number 57 to 71	Noble gas
5.	Element found in liquid state	Lanthanoids

E. Answer the following.

1. Write any two differences between alkali metals and halogens.
2. Chlorine has more electron affinity than fluorine. Why?
3. Write any two differences between electron affinity and electronegativity.
4. How does the atomic radius change as you go from left to right in a period?
5. An element of Group 14 has the atomic number 14. Examine if this element will have metallic properties or not.

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. c
2. c
3. c
4. c
5. b

B. Fill in the blanks from the choices given within the brackets.

1. decreases
2. alkali
3. increase
4. lose
5. 18

C. Name the following.

1. Helium
2. Caesium
3. Fluorine
4. Period six
5. Noble gases

D. Match the following.

1. High ionization energy	Noble gas
2. Least ionization potential	Na
3. Artificial radioactive element	Francium
4. Elements with atomic number 57 to 71	Lanthanoids
5. Element found in liquid state	Hg

E. Answer the following.

1.

	Alkali Metals	Halogens
i.	Alkali metals have low ionization energy.	Halogens have high ionization energy.
ii.	Alkali metals have one electron in the valence shell.	Halogens have seven electrons in the valence shell.

2. Because in case of fluorine, electron feels lesser attraction as compared to chlorine due to smaller size of fluorine atom.

3.

	Electron Affinity	Electronegativity
i.	It is the property of an isolated atom.	It is the property of an atom in the bonded state.
ii.	It is the amount of energy released when an isolated gaseous atom accepts an electron to form the gaseous negative ion.	It is the tendency of an element to attract a shared pair of electrons towards itself when combined in a compound.

4. The atomic radius decreases on going from left to right in a period till halogen. The noble gas atom has a larger atomic radius due to the interelectronic repulsion within the completely filled outermost shell.

5. Since the element is in Group 14, it has four valence electrons and it lies in the middle of the 3rd period. The element does not have any tendency to lose its valence electrons. Hence, it does not exhibit metallic properties.