WORKSHEET 2

CHAPTER 1 – THE PERIODIC CLASSIFICATION AND PERIODIC PROPERTIES OF ELEMENTS

A. Tick (✓) the correct option.

1. Among the period 2 elements the one which has high electron affinity is
   a. lithium. b. carbon. c. fluorine. d. neon.
2. With reference to the variation of properties in the Periodic Table, which of the following is generally true?
   a. Atomic size increases from left to right across a period.
   b. Ionization potential increases from left to right across a period.
   c. Electron affinity increases going down a group.
   d. Electronegativity increases going down a group.
3. What is the valency of elements in group I?
   a. One positive b. Two positive c. Three positive d. None of these
4. An element with least atomic size amongst carbon, nitrogen, boron and beryllium is
   a. carbon. b. nitrogen. c. boron. d. beryllium.
5. The element, amongst, Li, Na, K, which has maximum metallic character?
   a. Li b. Na c. K d. Both Li and Na

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

1. Increase in nuclear charge of an atom _____ (increases/decreases)the tendency of atoms to lose electrons.
2. An element 'E' in period 2 is to the right of element 'F'. The element 'E' is likely to be _____ (less/more) non-metallic in character than element F.
3. The _____ (metals/non-metals) are placed on the right hand side of the periodic table.
4. The elements placed in the extreme right hand side group are called _____ (noble gases/light gases)
5. The elements occupying the right and left wing vertical columns are called _____ (normal/transition) elements.

C. An element X belongs to III A group and another element E belongs to VII A group of the Periodic Table. Answer the following questions

1. How many valence electrons are in X?
2. How many valence electrons are in E?
3. Which amongst X and E is a metal?
4. What is the formula of the compound of X and E?
5. What kind of bonding is between X and E?

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Class: X Date: .....

D. Elements of a Group of the Periodic Table are given below.

(Boron is the first member of the group and thallium is the last.)

Boron, Aluminium, Gallium, Sodium, Thallium

Answer the following questions in relation to the above group of elements.

1. Which element has the most metallic character?
2. Which element would be expected to have the highest electronegativity?
3. If the electronic configuration of aluminium is 2, 8, 3, how many electrons are there in the outermost shell of thallium?
4. The atomic number of boron is 5. Write the chemical formula of the compound formed when boron reacts with chlorine.
5. Will the elements in the group to the right of the above given group be more metallic or less metallic in character? Justify your answer.

E. Read the given information and answer the following questions:

E (2, 6), F(2, 8), G(2, 7) and H(2, 8, 1) are the coded names of elements and their electronic configuration is shown within brackets.

1. Which element in the above list does not belong to the same period and why?
2. Which element is a noble gas?
3. Which element is absolutely essential for breathing?
4. Which element is a member of the halogen family?

ANSWERS

WORKSHEET 2

A. Tick (✓) the correct option.

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

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

1. decreases
2. more
3. non-metals
4. noble gases
5. normal

C. An element X belongs to III A group and another element E belongs to VII A group of the Periodic Table. Answer the following questions.

1. X has three valence electrons.
2. E has seven valence electrons.
3. X is a metal.
4. The formula of X and E is XE_3.
5. X and E have ionic bonding.

D. Elements of a Group of the Periodic Table are given below.

(Boron is the first member of the group and thallium is the last.)

Boron, Aluminium, Gallium, Sodium, Thallium

Answer the following questions in relation to the above group of elements.

1. Thallium
2. Boron
3. Three
4. BCl_3
5. Less metallic because non-metallic character increases on moving towards right hand side.

E. Read the given information and answer the following questions:

E (2, 6), F(2, 8), G(2, 7) and H(2, 8, 1) are the coded names of elements and their electronic configuration is shown within brackets.

1. The element H does not belong to the same period. It is because it has three electron shells, whereas E, F and G have two electron shells.
2. Element F is a noble gas.
3. Element E is essential for breathing as its electronic configuration corresponds to oxygen.
4. Element G belongs to the halogen family.