INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH: 4 Structure of atom

Name: _____ Date:_____ Class: IX Sec: ___

Answer the following

1. An atom of an element has 3 electrons in its 3rd orbit which is the outermost shell.
   Write its a) electronic configuration b) atomic number c) valency d) Name of the element
2. How many electrons, protons and neutrons are present in the element $^{19}_{9}X$?
   What will be the valency of the element? Identify the element.
3. The following data represents the distribution of electrons, protons and neutrons in atoms of 4 elements A, B, C and D?

Element	Protons	Neutrons	Electrons
A	19	21	19
B	17	18	17
C	17	20	17
D	18	22	18

   Answer the following questions;
   a)Write the electronic configuration of B
   b)Is element B a metal or non-metal and why?
   c)Which two elements form a pair of isotopes?
   d)Which two elements form a pair of isobars?
4. Why atomic mass of chlorine is 35.5 u and not a whole number?
5. Elements X, Y and Z have atomic numbers 6, 9 and 12 respectively. Which among these
   a) forms an anion (b) forms a cation (c) is a metal (d) has four electrons in the valence shell
6. Why do Helium, Neon and Argon have zero valency?
7. Give reasons for the following;
   a) Isotopes of an element are chemically similar
   b) An atom is electrically neutral.
   c) Nucleus of an atom is heavy and positively charged

d) Inert gas shows least reactivity

8. In the following table the mass number and the atomic numbers of certain elements are given;

Element	A	B	C	D	E
Mass Number	1	7	14	40	40
Atomic number	1	3	7	18	20

a) Select a pair of isobars from the given table

b) What would be valency of B? Is it a metal or non-metal?

c)Give the electronic configuration of D and E and identify the elements?

9. If ${}_{6}^{14}X$ is an isotope of element Y and has 2 neutrons less than X.

a) Write the symbol of element showing its mass number and atomic number.

b) Write the valency for these elements.

c) What relation is given for the chemical properties of X and Y.?

10. An element P has 3 valence electrons. What would be the nature and value of charge on the ion formed if all the electrons are removed from the outermost shell?

11. The relative atomic mass of copper is 63.5 u and its atomic number is 29. It exists as two isotopes with atomic masses 63 and 65. Calculate the percentage of each isotope present in it.