



DATE : 27/05/2012

IDEAL TEST SERIES

MARKS : 40

STD : X

SUBJECT: SCIENCE (SOL) SEC (I & II)

TIME : 1 .30

SECTION A

Ans.1.(A) Fill in the blanks (2 M)

- (1) Elements showing properties of both metal and non-metals are known as...**Metalloids.**
- (2) The law used by Newlands to arrange elements is known as...Law of **Newlands Octave.**

(B) True or False (2 M)

- (1) Atomic radius increase in a group from top to Bottom. **True**
- (2) Transition elements have last 3 shells incompletely filled. **False**

(C) State the following (2 M)

- (1) The physical and chemical properties of elements are a periodic function of their atomic masses.
- (2) The physical and chemical properties of elements are periodic function of their atomic number.

Ans.2.(A) Answer the following. (10 M)

(1)

	S block elements		P-block elements
(1)	I A & II A group elements	(1)	III A VII A & zero group up elements are p-block elements.
(2)	All are metal	(2)	They include metal non-metal & metalloids.

- (2)** (i) Valency of an element is determined by the number of valence electron.

- (ii) All elements of a group have same outer electronic configuration.
- (iii) As same number of valence electron are presents in the outermost shell.
- (iv) Hence elements in same group show same valency.
- (3)** (i) Zero group – Neon, Argon
- (ii) Halogen family. – Fluorine, Chlorine,
- (4)** (i) 3 Li – (2, 1) (ii) 12 Mg – (2, 8, 2)
- (5)** (a) Period -: Horizontal lows in periodic table.
- (b) Group - : Vertical Columns in periodic table.

Ans.3. Attempt any one

(4 M)

(1) Demerits:

- (i) Hydrogen resembles alkali metal as well as halogen therefore to fixed position could be given to hydrogen in periodic table.
- (ii) Isotope of same elements have different basic casuse therefore each one of them should be given a different position. On the other hand as isotope are chemically similar, they had to be given same position.
- (iii) As certain elements with higher at mass has been placed before lower mass eg. Cobalt (58.93) in placed before Nickel (58.71)
- (iv) Same elements placed in same sub group had different properties eg. Manganeese is placed with halogen.

(2) Law: - When the elements are arranged in an increasing order of their atomic masses, the properties of the eight elements are similar to first features:

- (i) Newlands could arrange elements up to calcium out of 56 elements known.
- (ii) After calcium every eight elements did not posses properties similar to that of first.
- (iii) At the time of Newlands only 56 elements were known. But later several elements were discovered.
- (iv) In order to fit the existing elements Newland placed two elements in the same position which differed in their properties.
- (v) This periodic table did not include inert gases because they were not discovered.

SECTION B

Ans.1.(A) Fill in the blanks. (2 M)

- (1) Metals react with acids to produce **salt** and **Hydrogen gas**
 (2) Pure gold is ...**24** carat gold.

(B) Find odd man out. (2 M)

- (1) Si - (Metalloid)
 (2) HCl - (acid)

(C) State True / False (2 M)

- (1) False - (basic)
 (2) False - (Hg is in liquid state)

Ans.2. Attempt the following. (10 M)

- (1) eg. (i) **Galvanizing** - Corrosion of metal can be prevented if the contact between metal and air is cut off by giving a coating of zinc or iron and steel to protect them from corrosion.
 (ii) Coating of metal with paints oil grease or various present corrosion of iron.

- (2) (i) **Ores** - The minerals from which metal extracted profitably and conveniently are called as ores.
 (ii) **Calcination.-** The carbonate ore are changed into oxides by heating through limited air this process is known as Calcination.

- (3) Sodium is one of the most reactive metal having valency -1
 (ii) Na reacts with oxygen in air at room temperature to form sodium oxide.

$$2 \text{Na} + \text{O}_2 \rightarrow 2 \text{Na}_2 \text{O}$$
 (iii) Sodium is stored under kerosene to prevent its reaction with oxygen, moisture and CO₂.

- (4) (i) Iron Sulphide → FeS ie. Iron
 (ii) Calcium carbonate → CaCO₃ ie Calcium Carbonate

- (5) Na, Ca, Mg, Zn, Fe, Cu.

Ans.3. Attempt (4 M)

- (a) Bayers process
 (b) Cathodic reaction - $\text{Al}^{+3} + 3\text{e} \rightarrow \text{Al}$
 (c) Cryolite is used to reduce the melting point of the mixture by 1000°c.
 (d) The equation is - $2\text{Al}(\text{OH})_3 \xrightarrow[1000^\circ\text{C}]{\text{heat}} \text{Al}_2\text{O}_3 + 3\text{H}_2\text{O}$