



# Pareeksha Kirana – 2021

From Team Vijnana Kirana

# 33

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Shridhar Maiah,  
GHS Guttur  
Harihara tq  
Davanagere Dist  
Mobile: 6363708896

Raghavendra  
Maiah GHS  
Byrapatna  
Channapattana  
Ramanagara Dist  
Mobile: 9986867647

Anil Kumar C N  
GHS Aralalusandra  
Ramanagar tq  
Ramanagara Dist  
Mobile: 9019801329

Laxmiprasad  
Nayak GHS (RMSA  
- kannada)Kengeri  
Bengaluru Dist  
Mobile: 7975333123

Ramachandra Bhat  
Govt High School  
Byatarayanapura  
Mysore Road  
Bengaluru Dist  
Mobile: 7892163470

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## CHEMISTRY

### Ch : 5 PERIODIC CLASSIFICATION OF ELEMENTS

1. A metal 'M' is in the 13<sup>th</sup> group of the Periodic Table. Its oxide formula and valency are : (a) MO , 2 (b) M<sub>2</sub>O , 2 (C) M<sub>2</sub>O<sub>3</sub> , 3 (d) M<sub>3</sub>O<sub>2</sub> , 3
2. Consider the elements - <sup>20</sup>Ca, <sup>8</sup>O, <sup>18</sup>Ar, <sup>16</sup>S, <sup>4</sup>Be, <sup>2</sup>He which of the above elements would you expect to be in group 16 of the Periodic Table? (a) <sup>20</sup>Ca and <sup>16</sup>S (b) <sup>20</sup>Ca and <sup>8</sup>O (c) <sup>18</sup>Ar and <sup>16</sup>S (d) <sup>8</sup>O and <sup>16</sup>S
3. What you mean by metallic character? How it varies along the period and down the group in the modern periodic table?  
 Ans : **Metallic character** is the tendency of an atom to lose electrons.  
**In Period:** Along the period, metallic characters decreases because a tendency to lose electron decreases due to the increase in nuclear charge. Ex: Metallic character in the 2<sup>nd</sup> period : **Li > Be > B > C >> N > O > F**  
**In Group:** Metallic character increases down the group due to increase in the atomic and hence tendency to lose electrons increases.  
 Ex: Metallic nature of first group elements: **Li < Na < K < Rb < Cs**
4. What you mean by non-metallic character? How non-metallic nature varies along the period and down the group of modern periodic table?  
 Ans : **Non-metallic character:** It is tendency of an atom to gain electrons.  
**In Period:** Along the period from left to right, non-metallic nature increases because tendency to gain electrons increases due to increase in nuclear charge.  
 Ex : Non-metallic nature in the 2<sup>nd</sup> period elements. **Li < Be < B < C < N < O < F**  
**In Group:** On moving from top to bottom in a group, non-metallic character decreases because atomic size increases and tendency to gain electrons decreases.  
 Ex: Non-metallic character of 17<sup>th</sup> period element: **F > Cl > Br > I**
5. What you mean by Electronegativity? How it varies along the period and down the group in the modern periodic table?  
 Ans : **Electronegativity:** It is tendency of an element to attract the shared pair of electrons towards it.  
 Along the period electronegativity increases. Ex : **Li < Be < B < C < N < O < F**.  
 Down the group electronegativity decreases. Ex: **Li > Na > K > Rb > Cs (group 1)**  
**F > Cl > Br > I ( Group 17 )**

6. In the modern periodic table , which element has :  
 (a) two shells, both of which are completely filled with electrons?  
 (b) the electronic configuration - 2, 8, 1?  
 (c) a total of three shells, with four electrons in its valence shell?  
 (d) a total of two shells, loses three electrons from its valence shell?  
 (e) twice as many electrons in its second shell as in its first shell  
 (f) which one is - most metallic, most non- metallic element and a noble gas?

Ans : (a) Element is neon [2(K), 8(L)]

(b) Element is sodium [2(K), (L), 1(M)]

(c) Element is silicon [2(K), 8(L), 4(M)]

(d) Element is boron [2(K), 3(L)]

(e) Element is carbon [2(K), 4(L)]

(f) **metal : Sodium , non metal : carbon , noble gas : Neon**

1	2	15	16	17
A			B	C
	D			E
F		H		I

a) Most metallic element in the given table is – Ans : **F**

b) Most nonmetallic element is ---Ans : **C**

c) Arrange- A, C, D, H according to atomic size increasing of atomic size . **A < B < C < D < E < F < G < H < I**

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