

**National Institute of Open Schooling**  
**Senior Secondary Course: Chemistry**  
**Chapter- 3 (Periodic Table and Periodicity in Properties)**  
**Worksheet-3**

1. Refer the modern periodic table and answer the following questions.
  - (i) The elements placed in group number 18 are called.....
  - (ii) Alkali and alkaline earth metals are collectively called .....block metals.
  - (iii) The general configuration for halogens is.....
  - (iv) Name a p-block element which is a gas other than a noble gas or a halogen.
  - (v) Name the groups that comprise the 's' block of elements.
  - (vi) Element number 118 has not yet been established, to which block, will it belong?
  - (vii) How many elements should be there in total if all the 7s, 7p, 6d and 5f, blocks are to be full?
2. Describe the variation of electron gain enthalpy and ionization enthalpy in the periodic table.
3. Which one have lower first ionization enthalpy and why?
  - i) Na or Ca ii) K or Ar iii)  $\text{Na}^+$  or Na
4. Which one have high electron gain enthalpy and why?
  - i)  $\text{O}^-$  or  $\text{O}^{2-}$  ii)  $\text{O}^-$  or S iii)  $\text{N}^-$  or P
5. Define the following:
  - (a) Electron gain enthalpy (b) Ionization enthalpy (c) Ionic radius (d) Electronegativity.
6. What is electronegativity? How is it related to the type of bond formed?
7. Why is the electron gain enthalpy of Cl more in negative value as compared to that of F?
8. Define ionic radii. Arrange these ionic species in order of decreasing ionic radii.
  - i)  $\text{Na}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{K}^+$ ,  $\text{Al}^{3+}$  ii)  $\text{N}^{3-}$ ,  $\text{O}^{2-}$ ,  $\text{F}^-$ ,  $\text{Br}^-$
9. Explain Why
  - i) First ionization enthalpy of N is more than O.
  - ii) Second electron gain enthalpy of O is negative.
  - iii) All transition elements are d-block elements but all d-block elements are not transition elements.
  - iv) N has positive electron gain enthalpy but O has negative electron gain enthalpy.

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10. Pl consider this part of periodic table and answer below given questions

Group \ Period	1	2	d-block Elements	13	14	15	16	17	18
2		A			M	F	G	X	
3	B							Y	
4	R		S					Z	
5	O			D					
6									Q

- i) Which one may be a transition element?
- ii) What is the Family name of elements, XYZ ?
- iii) Which one is most reactive Metal?
- iv) Which one is most reactive non metal?
- v) Which one is also known as chalcogens ?
- vi) Which one is alkali metal?
- vii) Which one is alkaline earth metal?
- viii) What is the valency of Q, X, N & P?
- ix) What is the formula of compound formed by reaction of A & F?
- x) Which one has smallest and which one has biggest size?

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