

INDIAN SCHOOL DARSAIT



DEPARTMENT OF CHEMISTRY

Subj	ect: Chemistry Topic :Classification of elements and Date of Worksheet:18.8.2019 Periodicity in properties			
Resource Person: Rohitha Date of Submission:				
Moss	e of the Student: Class &Division: XI Roll Number:			
INaiii	e of the Student: Class &Division: XI Roll Number:			
1.	State modern periodic law.	1		
2.	Arrange the following in the order of increasing radii. Justify your answer.	1		
	(a) I, I ⁺ , I ⁻ (b) F, Cl, Br	each		
3.	Noble gases have zero electron gain enthalpy values. Explain.	1		
4.	Predict the period, group and block of the elements with atomic number 9,21,26,36.	2		
	Which of them has positive electron gain enthalpy?			
5.	Give reason:	1		
	i) The ionization enthalpy of N is higher than O.	each		
	ii) Be has higher ionization enthalpy than B.			
	iii) S has more negative electron gain enthalpy than O.			
	iv) The ionization enthalpy of Na ⁺ is higher than Ne.			
	v) Mg ²⁺ ion is smaller in size than O ²⁻ ion.			
	vi) The first ionization enthalpy of magnesium is higher than that of sodium. On the other hand,			
	the second ionization enthalpy of sodium is very much higher than that of magnesium.			
6.	An element to third period of p-block elements. It has 4 electrons in its outer most shell.	2		
	Predict its group. How many unpaired electrons does it have?			
7.	Show by reaction with water that Na ₂ O is basic in nature and Cl ₂ O ₇ is acidic in nature.	2		
8.	Element A,B,C,D,E have the following electronic configuration:	2		
	A: $1s^22s^22p^1$ D: $1s^22s^22p^63s^23p^5$			
	$B:1s^{2}2s^{2}2p^{6}3s^{2}3p^{1} \qquad \qquad E:1s^{2}2s^{2}2p^{6}3s^{2}3p^{6}4s^{2}$			
	$C:1s^22s^22p^63s^23p^3$			
	a) Which among these will belong to the same group?			
	b) Which among these belong to same period?			
	c) Which has highest electronegativity?			
	d) Which element has biggest size?			
9.	Write the general configuration of d-block elements. Also give any four characteristic	3		
	properties possessed by d-block elements.			
10.	Which element has smaller size: O or N? Why?	3		
	Name two cations and two anions isoelectronic with Ar (Z=18). Arrange them in			
	increasing order of size.			
11.	Among the elements of the second period Li to Ne pick out the element:	3		
	(i) with the highest first ionization energy			
	(ii) with the highest electro negativity			

	(iii) With the largest atomic radius .Give the reason for your choice.						
12.	a) The electronic configuration of the element A is $1s^22s^22p^63s^2$.					3	
	i) To which	h perio	d it belo	ongs?			
	ii) Name the group to which it belongs?						
	 iii) Write down the formula of the carbonate of A. b) Write the oxidation state and covalency of Al in [AlCl (H₂O)₅]²⁺. 						
13.	a) Write th	element with Z=114.	3				
	b) Which is smaller and why: Al ³⁺ or Al. why?						
14.	What is meant by diagonal relationship? What are the factors on which it depends?						
15.	,	$(\Delta i H_2)$ ionization enthalpies (in kJ/mol) and the electron w elements are given below.	3				
	Element	$\Delta i H_1$	$\Delta i H_2$	egH			
	I	520	7300	-60			
	II	419	3051	-48			
	III	1681	3374	-328			
	IV	1008	1846				
	V	2372	5251				
	VI	738	1451	-40			
	Which of the above elements is likely to be:						
	(a) The least reactive element. (b) the most reactive metal.						
	(c) the most reactive non-metal. (d) The least reactive non-metal.						
	(e) The metal which can form a stable binary halide of the formula MX ₂ , (X=halogen).						
			predominantly stable covalent halide of the formula MX				
	(X=haloge	n)!					

ISD/XI/CHEM/2019-20 Page 2