DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : CHEMISTRY
DPP No. : 2

Topic :- Classification of Elements & Periodicity in Properties

1 **(b)**
Only p-orbitals give rise to σ-bond (head on overlapping) and π-bond (lateral overlapping).

2 **(b)**
Each has 22 electrons.

3 **(b)**
$BF_3 : sp^2$ $NO_2^- : sp^2$ $NH_3 : sp^3$ $NH_2^- : sp^3$ $H_2O : sp^3$

4 **(a)**
Atomic and ionic radii increase from top to bottom in a group due to the inclusion of another shell at every step. Hence, Cs^+ ion will be the largest among given IA group ions (Na^+, Li^+ and K^+)

5 **(a)**
Due to non-availability of d-orbitals, boron cannot expand its octet. Therefore, the maximum covalence of boron cannot exceed 4.

6 **(b)**
Larger anion is easily deformed (Follow Fajans' rule).

7 **(b)**
ClO_3^- has sp^3-hybridization with one lone pair of electron.

10 **(c)**
Silicon has the tendency to show covalent bonding because of higher IP values.

1 **(b)**
$BeCl_2$-sp; BF_3-sp^2; NH_3-sp^3; XeF_2-sp^3d

12 **(d)**
He has $1s^2$ configuration.

13 **(c)**
CO_2 is linear molecule.

14 **(b)**
Ionisation energies increase in a period on moving left to right while it decreases in a group on moving downward. The IE of Be is greater than B due to completely filled s-orbital. Hence, the order of IE is as
$$Be > B > Li > Na.$$

15 **(d)**
In inner transition elements, the differentiating electrons enter into $(6n - 2)f$ orbital. Therefore, these elements are also known as f-block elements.

16 **(c)**
Ionic compounds conduct current in molten state.

17 **(a)**
Difference of electronegativity > 1.7 produces ionic compound.

18 **(c)**
Ionic radii $\propto \dfrac{1}{Z_{\text{eff}}}$

19 **(d)**

In sulphur, the excitation of np-electrons to nd-subshell gives rise to increase in number of unpaired electrons.
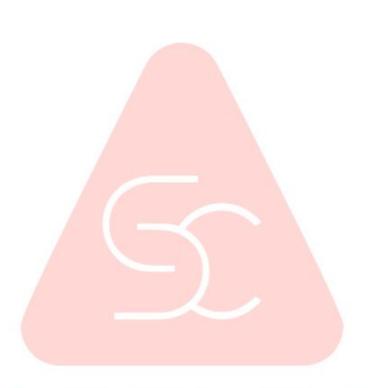
20 **(b)**

As the number of shells increases, ionic radii increases

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	B	B	B	A	A	B	B	A	A	C
Q.	11	12	13	14	15	16	17	18	19	20
A.	B	D	C	B	D	C	A	C	D	B