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

$$\text{Be} > B > Li > Na.$$

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 $\propto \frac{1}{Z_{\text{eff}}}$

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**