DPP

DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : CHEMISTRY
DPP No. : 4

Topic :- Classification of Elements & Periodicity in Properties

1 **(c)**
CaO is basic oxide.

2 **(b)**
Be in BeF_3^- is sp^2-hybridized .

3 **(a)**
$_3Li - 1s^2 2s^1$ donates one electron easily

4 **(b)**
Ionization energy increases along the period and decreases down the group. Also (b) has [Ne] $3s^2, 3p^3$, *i.e.*, half filled configuration, being more stable and thus, have high ionization energy

5 **(c)**
Carbon cannot accept $6Cl^-$, since it has no vacant *d*-orbitals.

6 **(d)**
BCl_3 has sp^2-hybridization. Rest all have sp^3-hybridization having one lone pair of electron and thus, pyramidal in nature.

7 **(c)**
Both NH_3 and H_2O have sp^3-hybridization. CO_2 and $BeCl_2$ are linear (*sp*-hybridization)

8 **(d)**
The bond angles in sp^3, sp^2 and *sp*-hybridization are 109°, 120° and 180° respectively.

9 **(a)**
B.p. of H_2 is minimum.

10 **(b)**
e.g., BF_3.

11 **(a)**
s-orbitals never go for lateral overlapping because of non-directional nature.

12 **(c)**
H_2O possesses the tendency for H — bonding.

13 **(d)**
It is a reason for given fact.

14 **(c)**
It is a fact.

15 **(b)**

Rest all either has incomplete (BF_3,BeF_2) octer or expanded octet (ClO_2).

16 **(a)**

Bond energy increases with increase in bond order.

17 **(b)**

Electron affinity is defined as, "The energy released when an extra electron is added to a neutral gaseous atom."

Electron affinity of F=332.6 kJ/mol

Electron affinity of Cl=348.5 kJ/mol

Electron affinity of S=200.7 kJ/mol

Electron affinity of O=140.9 kJ/mol

Highest electron affinity among fluorine, chlorine, sulphur and oxygen, is of chlorine.

The low value of electron affinity of fluorine than chlorine is probably due to small size of fluorine atom *i.e.*, electron density is high which hinders the addition of an extra electron.

18 **(b)**

Bond order for $O_2 = 2$ and for $O_2^+ = 2.5$

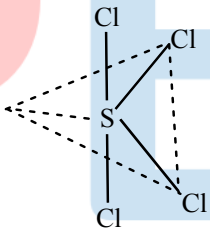
Both are paramagnetic (O_2 has 2 unpaired electron, O_2^+ has one unpaired electron).

19 **(d)**

Bond order for $H_2^- = +1/2$.

20 **(c)**

S in SCl_4 is sp^3d-hybridized and possesses see-saw structure whereas $SiCl_4$ is tetrahedral.



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