CHEMISTRY ONLINE
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CHEMISTRY

MULTIPLE CHOICE - 5

CHEMICAL BONDING

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1) Helping concepts

Substances with a giant covalent structure do not readily dissolve in solvent. Even when it dissolves, they exist as giant molecules and hence not able oconduct electricity in solution.

2) Helping concepts

In BaO_2. the anion exists as O_2^{2-} where 2 electrons are transferred from Ba.

3) Helping concept

In a solid ionic compound, the ions are localised and hence they cannot conduct electricity. In a metal, the delocalised electrons are responsible for its electrical conductivity.

A: Diamond, SiO_2 are giant covalent substances (without H − bonds)with high melting points.

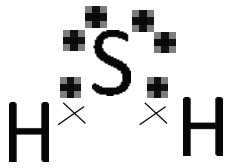
B: CH_3CHO does not form H − bonds with another molecules of itself (the H atom needs to be covalently nonded to N, O, F),

C: $NH_4{}^+Cl^-$ has ionic bond and covalent bonds (N – H BOND).

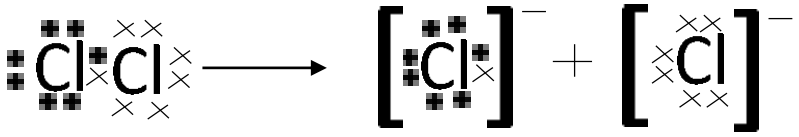
4) Helping concept

In CuO, the copper ion is Cu^{2+}. Its electronic configuration is $1s^2\ 2s^2\ 2p^6 3s^2\ 3p^6\ 3d^9$. There is a single unpaired electron is the 3d orbital.

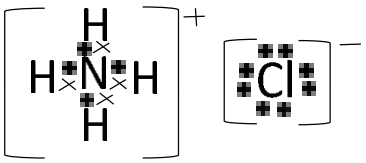
A:



B:



C:



5) Helping Concepts

All the compoounds exist as discrete molecules. The oiling point therefore depends on the strength of the intermolecular force of attraction 1 *and* 4 *are isomers. However,* 1 *is highly branched and hence has weaker VDW forces.* 4 *iis therefore highere boiling than .* 1 *VDW forces in* 3 *is stronger than that in* 4 *because* 3 *has a larger molecular size and more electrons per molecule. Hence,* 3 *has a higher boiling point than* 4. 2 *ha the highest boiling point because it is capable of intermolecular hydrogen − boiling which is stronger than the VDW forces.*

6) Helping Concept

sp^2C atoms are trigonal planar and there are 2 *single bonds and* 1 *double bond at this C.*

7) Helping Concept

The M_r of butanone and pentane are both 72. *Permanent dipole − permanent dipole i interactions exist between butanone molecules due to the presence of the polar $C = O$ bond. The hydrocarbon has only weak vander Waal'sattractions operating between the molecules.*

8) Helping Concept

X uses 3 *of its valence electrons for bonding shaped, suggesting that there is either* 1 *or* 2 *lone pairs of electrons. Hence, X has either* 5 *or* 7 *valence electrons, i.e. X is either a Group V or Group VII element. Y is is likely to be a Group V element since the diagram shows that there* 5 *valence electrons. heweer. Y cannot be N because N is unable to expand its octet*

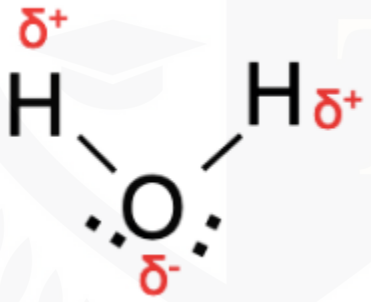
configuration. The structure shows that Y has accomodated 10 *electrons. Forming only a single bond. Z could be hydrogen or a Group VII element.*

9) **Helping Concept**

$CHCL_3$ is polar. In the presence of the negatively charged rod, the molecules aligned themselves such that the $\delta +$ end of the molecules faces the rod. Consequently, the stream of liquid becomes attracted to the rod.

10) **Helping Concept**

In a H_2O molecule the $H - O$ bonds are polar due to the difference in their electronegativities. Since the molecule is non $-$ linear, the dipole moment of the 2 $H - O$ bonds do not cancel each other vectotically. Hence H_2O IS POLAR.



I am Sorry !!!!!

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- Founder & CEO of Chemistry Online Tuition Ltd.
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