

CHEMBUDDY CHAPTER 4  
4.4 INTERMOLECULAR FORCES



CHOOSE THE CORRECT ANSWER

NO	QUESTION	ANSWER															
1	<p>Which one of the following pairs exhibits the same hybrid orbitals of central atom?</p> <p>A. <math>\text{PCl}_3</math> and <math>\text{NH}_3</math>          B. <math>\text{PCl}_3</math> and <math>\text{BCl}_3</math>          C. <math>\text{NCl}_3</math> and <math>\text{AlCl}_3</math>          D. <math>\text{BeCl}_2</math> and <math>\text{H}_2\text{O}</math></p>	<p>A      B</p> <p>C      D</p>															
2	<p>In hybridisation process of <math>\text{ICl}_3</math> molecule, _____ electron/electrons in 5p orbital excited to 5d orbitals before it form _____ hybrid orbital.</p> <p>A. 3, <math>\text{sp}^3\text{d}</math>      C. 1, <math>\text{sp}^3\text{d}</math>          B. 1, <math>\text{sp}^3</math>      D. 3, <math>\text{sp}^3</math></p>	<p>A      B</p> <p>C      D</p>															
3	<p>i. During melting, the intermolecular forces are overcome by heat supplied. Choose the <b>incorrect</b> pair.</p> <table border="1"> <thead> <tr> <th></th> <th>Substance</th> <th>Force being overcome</th> </tr> </thead> <tbody> <tr> <td>A.</td> <td>Ice</td> <td>hydrogen bonds between <math>\text{H}_2\text{O}</math> molecules</td> </tr> <tr> <td>B.</td> <td>Sulphur</td> <td>van der Waal's forces between <math>\text{S}_8</math> molecules</td> </tr> <tr> <td>C.</td> <td>Sodium chloride</td> <td>ionic bond between opposite charged ions</td> </tr> <tr> <td>D.</td> <td>Naphthalene</td> <td>Van der Waals forces between naphthalene molecules</td> </tr> </tbody> </table>		Substance	Force being overcome	A.	Ice	hydrogen bonds between $\text{H}_2\text{O}$ molecules	B.	Sulphur	van der Waal's forces between $\text{S}_8$ molecules	C.	Sodium chloride	ionic bond between opposite charged ions	D.	Naphthalene	Van der Waals forces between naphthalene molecules	<p>A      B</p> <p>C      D</p>
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	<p>. Between ethanol, <math>C_2H_5OH</math>, and water, <math>H_2O</math>, which one have higher boiling point? Explain.</p> <p>A. Ethanol has higher boiling point than water because it has greater molar mass.</p> <p>B. Ethanol has lower boiling point than water because it cannot form hydrogen bond between molecules.</p> <p>C. Water has higher boiling point than ethanol because water can form more intermolecular hydrogen bond.</p> <p>D. The boiling point of both are not much different because both molecules can form hydrogen bond.</p>	
4		A      B  C      D
5	<p>Hydrogen fluoride has higher boiling point than ammonia. Choose the most accurate statement to explain this.</p> <p>A. Fluorine is less electronegative than nitrogen. Thus, hydrogen bond is stronger.</p> <p>B. Fluorine is more electronegative than nitrogen. Thus, hydrogen bond is stronger.</p> <p>C. Hydrogen fluoride forms more hydrogen bonds per molecule than ammonia can form.</p> <p>D. The fluorine-hydrogen bond is stronger than the nitrogen-hydrogen bond.</p>	A      B  C      D
6	<p>The following statement explain why water is denser than ice except:</p> <p>A. Each water molecule in ice is tetrahedrally hydrogen bonded to four other water molecules.</p> <p>B. In ice, water molecules in an open structure.</p> <p>C. At lower temperature, water molecules are far apart.</p> <p>D. There are large spaces within ice.</p>	A      B  C      D

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	<p>The conduction of electricity in metallic bonding is due to presence of</p> <p>A. proton. B. lattice. C. delocalised electron. D. nucleus.</p>	A      B C      D
7	<p>Because of the mobility of the delocalised valence electrons, metals are</p> <p>A. not able to be deformed without breaking. B. not able to be drawn into wire. C. bad electrical conductor. D. able to transfer heat.</p>	A      B C      D
8	<p>Factor(s) that influence(s) the values of boiling points of simple covalent molecule with comparable relative molecular mass is (are).</p> <p>I: molecular geometry II: resultant of dipole moment III: types of intermolecular forces</p> <p>A. I only      C. II and III B. I and II      D. I,II and III</p>	A      B C      D
9	<p>Boiling point of halogen increases down a group because</p> <p>A. Atomic size increases down a group. B. Screening effect decreases down a group. C. Number of proton increase, electron closer to nucleus. D. Molecular size increases down a group.</p>	A      B C      D
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