



**CHEMISTRY ONLINE**  
— **TUITION** —

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# CHEMISTRY

**MULTIPLE CHOICE - 2**

**CHEMICAL BONDING**

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## Chemical Bonding - 2

1. As the number of carbon atoms in the homologous series of alkane molecules increases, for which property of the alkanes does the numerical value decrease?

- (A) density                      (B) enthalpy                      (C) number of isomers                      (D) vapour pressure

2. Which type of bond is responsible for intermolecular forces in liquid tetrachloromethane, CCl<sub>4</sub>?

- (A) covalent bonding  
 (B) hydrogen bonding  
 (C) induced dipole – induced dipole attractions  
 (D) permanent dipole – permanent dipole attractions

3. Which one of the following molecules will have no permanent dipole?

- (A) C<sub>2</sub>Cl<sub>4</sub>                      (B) CF<sub>2</sub>Cl<sub>2</sub>                      (C) C<sub>2</sub>H<sub>5</sub>Cl                      (D) CHCl<sub>2</sub>

4. Which equation defines the lattice energy of the ionic compound XY?

- (A)  $X(s) + Y(s) \rightarrow XY(s)$                       (C)  $X^+(s) + Y^-(s) \rightarrow XY(s)$   
 (B)  $X(g) + Y(g) \rightarrow XY(s)$                       (D)  $X^+(s) + Y^-(s) \rightarrow XY(s)$

5. The lattice energies of the compounds caesium chloride, caesium fluoride, sodium chloride and sodium fluoride are given below.

Which value corresponds to the lattice energies of the compound caesium chloride, caesium fluoride are given below.

Which value corresponds to the lattice energy of caesium chloride?

- (A) -661 kJ mol<sup>-1</sup>                      (B) -747 kJ mol<sup>-1</sup>                      (C) -780 kJ mol<sup>-1</sup>                      (D) -918 kJ mol<sup>-1</sup>

6. Which of the following isomers is likely to have the highest boiling point?

- (A) (CH<sub>3</sub>)<sub>2</sub>CHCH(CH<sub>3</sub>)<sub>2</sub>                      (C) CH<sub>3</sub>CH<sub>2</sub>CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>  
 (B) (CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>                      (D) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>

7. What is the approximate value of the O-C-O bond angle in ethanoic acid?

- (A)  $-45^\circ$                       (B)  $90^\circ$                       (C)  $109^\circ$                       (D)  $120^\circ$

8. Which one of the following structural features is common to both diamond and graphite?

- (A) a carbon- carbon bond length equal to that in ethane  
(B) covalent bonds between carbon atoms  
(C) delocalized electrons  
(D) each carbon atom bonded to four others

9. A mixture of aqueous silver nitrate and aqueous potassium cyanide, KCN, is used for electroplating.

The mixture contains the complex ion  $[\text{Ag}(\text{CN})_2]^-$

What is the carbon-silver-carbon bond angle?

- (A)  $104^\circ$                       (B)  $109.5^\circ$                       (C)  $120^\circ$                       (D)  $180^\circ$

10. Which of the following is a property of a solution of dry hydrogen chloride in dry methylbenzene?

- (A) It has a pH less than 7.  
(B) It is a non-conductor of electricity.  
(C) It reacts with magnesium to give hydrogen.  
(D) It reacts with dry copper (II) oxide on warming to give a blue solution.

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I am Sorry !!!!!



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- Founder & CEO of Chemistry Online Tuition Ltd.
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