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CHEMISTRY

MULTIPLE CHOICE - 3

CHEMICAL BONDING

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Chemical Bonding - 3

- **1.** Predict the most likely bond angle at each nitrogen atom in diamine, HN-NH.
 - (A) 107°

(B) 118°

(C) 120°

- (D) 180°
- 2. Graphite can be used as a lubricant; diamond cannot. This is because graphite has
 - (A) delocalized electrons.
 - (B) a hexagonal arrangement of atoms in the layers.
 - (C) covalent bonds between atoms in the layers.
 - (D) van der Waals' forces between the layers of atoms.
- 3. In which one of the following does ionic bonding occur between the named atoms?
 - (A) aluminium and chlorine in the tetrachloroaluminate ion
 - (B) boron and fluorine in boron trifluoride
 - (C) hydrogen and chlorine in hydrogen chloride
 - (D) hydrogen and sodium in sodium hydride
- **4.** The C₂H₂ molecule us linear.

What can be deduced from this about the numbers of σ and π bonds present in the molecule?

	σ	π
Α	2	2
В	2	3
С	3	1
D	3	2

5. The atoms X and Y have the electronic configurations shown below.

$$X:1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$$
; Y: $1s^2 2s^2 2p^4$

Which one of the following compounds are they likely to form?

(A) XY

(B) XY₂

(C) X_2Y

(D) XY₄

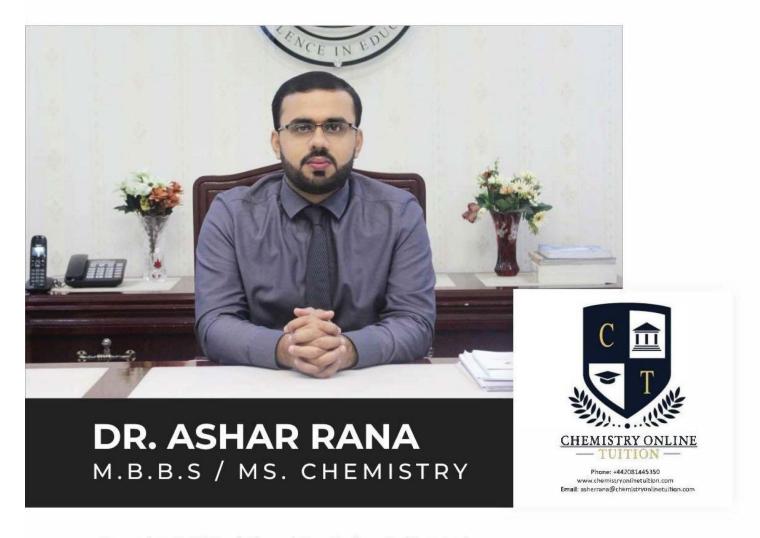
- **6.** Which one of the following is a linear molecule?
 - (A) H_2O

(B) HCN

(C) SO₂

(D) C₂H₄

7.	Which	n molecule is planar?									
	(A)	NF ₃	(B)	C_2CI_4	(C)	C ₃ H ₆	(D)	C3H ₈			
8.	Whic	ch of the following sta	tements de	scribes a phen	omenon which ca	n be explained by	intermolecular hy	drogen-			
	bone	nding.									
	(A)	The boiling points if the alkanes increase with increasing relative molecular mass.									
	(B)	CH_3OCH_3 (M_r =46) has a higher boiling point than $CH_3CH_2CH_3(M_f$ =44).									
	(C)	Hydrogen chloride forms an acidic solution when dissolved in water.									
	(D)	Ice has a lower density than water at O °C.									
_											
9.	The	gecko, a small lizard, c	an climb up	a smooth glass	s window. The ged	cko has millions of	microscopic hairs	on its			
	toes	toes and each hair has thousands of pads at its tip. The result is that the molecules in the pads are extremely close									
	to th	the glass surface on which the gecko is climbing. What is the attraction between the gecko's toe pads and the									
	glass	s surface?									
	(A)	co-ordinate bonds		(C)	ionic bonds						
	(B)	covalent bonds		(D)	van der Waal's fo	orces					
10). Soli	d carbon dioxide, CO₂(s) (dry ice),	is used as refri	gerating agent be	cause it readily ch	anges directly from	m the			
	soli	id into the vapour stat	e at a low te	emperature.							
	(A)	covalent bonding	(B) hyd	drogen bonding	g (C) ionid	c bonding (D) van der Waals	s' forces			



- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
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