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		EXERCISE-I	Conceptual Question	ons)\
OCT	ET RULE			
1.	Among the follow	ing element group nu	mber is not equals to	valence electrons -
	(1) Na	(2) N	(3) Ne	(4) None
_				
2.	Which of the follow	wing does not act as	lewis acid ?	
	(1) $BF_3$	(2) $SnC1_4$	$(3) \operatorname{CCl}_4$	(4) $SF_4$
2	The stars ath of her	CONV	ALENT BOND	in a headha andam
3.	The strength of bot $(1)$	$\frac{1}{2} \frac{1}{2} \frac{1}$	p and $2p - 2s$ overlapp	bing has the order:-
	(1) $s - s > p - p > s$ (2) $p - p > s$	- p	(2) $s - s > p - s$	> p - p
	(3) p - p > s - p > s	- 8	(4) p - p > s - s	> p - s
4	In which of the exc	ritation state of chlor	ine CIE <sub>2</sub> is formed '-	
т.	(1) In oround state		(2) In third even	itation state
	(3) In first excitation	on state	(4) In second ex	xcitation state
		JII SUUC		Actuation state
5.	A sigma bond is fo	rmed by the overlap	ning of ·	
~•	(1) s-s orbital alone	e e e e e e e e e e e e e e e e e e e	P 0 01 .	
	(2) s and n orbitals	alone		
	(2) s and p orbitals along internuclear axis			
	(4) n-n orbital along the sides			
		B the black		
6.	Which overlapping	y is involved in HCl	nolecule :-	
	(1) s-s overlap	, , ,	(2) p-p overlap	
	(3) s-d overlap		(4) s-p overlap	
	(c) s a s terrap			
7.	Which is not characteristic of n-bond:- (1) $\pi$ - bond is formed when a sigma bond already formed (2) $\pi$ - bond are formed from hyprid orbitals			
	(2) $\pi$ - bond may be formed by the overlapping of p orbitals			
	(5) $\pi$ - bond may be formed by the overlapping of p-orbitals			
	$(+)$ $\pi$ - bolid results	s nom rateranovertap	of atomic orbitals	
e /	- hand is formed .			
0.	(1) By overlapping	-	16	
	(1) By overlapping of hybridised orbitals			
	(2) Overlapping of (2) Head on overla	s - s orbitals		
	(3) Head off overla	pping of p -p ofonais	•	
	(4) By p- p conate	ai overlapping		
9	Which of the follow	wing hand is strong	st 9	
9.	$(1) 1_{0} 1_{0}$	(2) 2n - 2n	$(3) 2_{0} - 2_{0}$	(4) 15 2p
	(1) 15 - 15	(2) 2p - 2p	(3) 28 - 2p	(+) 13 - 2p
10	n-n overlanning wi	Il he observed in the	molecules of	
10.	(1) Hydrogen		(2) Hydrogen h	romide
	(1) Hydrogen chlor	ride	(2) Hydrogell U (4) Chlorine	
	(3) Hydrogen enio			
11.	Which compound	of xenon is not possi	ble	
11.	Which compound	of xenon is not possil	ble	

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	(1) XeF <sub>2</sub>	(2) XeF <sub>4</sub>	(3) XeF <sub>5</sub>	(4) $XeF_6$	
12.	Similarity of fluorin (1) Their atomic and (2) The atom of both (3) Both of them are (4) Both form stable Higher is the bond of	e and oxygen ma l ionic radii are c n elements attain highly electrone $p\pi$ - $p\pi$ multiple rder greater is	ay not be attributed losely similar an octet of electron egative elements bonds with themse	to- as in their valence shell lves	
10.	<ul><li>(1) Bond dissociatio</li><li>(3) Bond length</li></ul>	n energy	(2) Covaler (4) Parama	nt character gnetism	
		HY	BRIDISATION		
14.	In the protonation of (1) Hybridisation state (3) Hybridisation and	f H <sub>2</sub> O, change oc ate of oxygen d shape both	curs in (2) Shape o (4)None	of molecule	
15.	In the compound				
16.		${}^{4}_{C}H_{2} - {}^{5}_{C} \equiv {}^{6}_{C}H$ , t g species identif ${}^{0}_{1}$ , HN <sub>3</sub> [BF <sub>3</sub> , H <sub>3</sub> O <sup>+</sup> ]	he C <sup>2</sup> – C <sup>3</sup> bond is a (2) sp <sup>3</sup> - sp (4) spL sp3 y the isostructural p	formed by the overlapping of :- 3 bairs:-	
17.	(2) $[NF_3, HN_3]$ and $[(3) [NF_3, H_3O^+]$ and (3) $[NF_3, H_3O^+]$ and (4) $[NF_3, H_3O^+]$ and Which of the set of s (1) $NO_2^+$ , $NO_2$ , $NO_2$ (3) $NH_4^+$ , $H_3O^+$ , $OF_2$	[NO <sub>3</sub> <sup>-</sup> , BF <sub>3</sub> ] [ NO <sub>3</sub> <sup>-</sup> , BF <sub>3</sub> ] [HN <sub>3</sub> , BF <sub>3</sub> ] species have sam	the hybridization stat (2) $\text{ClO}_4^-$ , (4) $\text{SO}_4^{-2}$ ,	te but different shapes:- SF <sub>4</sub> , XeF <sub>4</sub> PO <sub>4</sub> <sup>-3</sup> , ClO <sub>4</sub> <sup>-</sup>	
18	Which of the follow	ing elements can	not exhibit sp <sup>3</sup> d hy	bridization state :-	
10.	(a) C (b) P	(c) Cl	(d) B		
	Correct answer is:- (1) a, c	(2) a, d	(3) b, c	(4) b, d	
19.	Which of the follow (a) $NH_3$ (b) $N$ The correct answer i (1) b and c	ing species are end $H_3^{2+}$ s: (2) c and d	xpected to be plana (c) $CH_3^+$ (3) band d	r:- (d) PCl <sub>3</sub> (4) a and d	
20.	In which following s (1) $CH_4$ , $NH_4^+$ , $BH_4$ (3) $NO_2^+$ , $CO_2$ , $XeF_2$	set of compound/ - 2	/ion has linear shap (2) $CO_3^{-2}$ , (4) $BeCl_2$ ,	e NO <sub>4</sub> <sup>-</sup> , BF <sub>3</sub> BCl <sub>3</sub> , CH <sub>4</sub>	

21. Which order of decreasing bond angle is correct:-

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(1) $CCl_4 > BF_3 > NO_2^+$	(2) $NH_3 > NCl_3 > NBr_3$
(3) $Br_2O > Cl_2O > PI_3$	(4) PCb > P8r3 > Ph

- Which of the following set is not correct:
  (1) SO<sub>3</sub>, O<sub>3</sub>, NH<sub>4</sub><sup>+</sup> all have coordinate bonds
  (2) H<sub>2</sub>O, NO<sub>2</sub>, ClO<sub>2</sub><sup>-</sup>, all are 'V' shape molecules
  (3) I<sub>3</sub><sup>-</sup>, ICl<sub>2</sub><sup>-</sup>, NO<sub>2</sub><sup>+</sup>; all are linear molecules
  (4) SF<sub>4</sub>, SiF<sub>4</sub>, XeF<sub>4</sub> are tetrahedral in shape
- 23. Shape of a molecule having 4 bond pairs and two lone pairs of electrons, will be :
  (1) Square planar
  (2) Tetrahedral
  (3) Linear
  (4) Octahedral
- **24.** The shape of  $IF_4^+$  will be:<br/>(1) Square planar<br/>(3) Pentagonal bipyramidal(2) Tetrahedral<br/>(4) Distorted tetrahedral
- **25.** Which of the following has pyramidal shape? (1)  $BF_3$  (2)  $H_3O^+$  (3)  $NO_3^-$  (4)  $CO_3^{2-}$
- 26. A cr bonded molecule  $MX_3$  is T-shaped. The number of non-bonding pairs of electrons is (1) 0
  - (2) 2
  - (3) 1
  - (4) Can be predicted if atomic number of M is known.
- 27. Amongst  $CO_3^{2-}$ ,  $AsO_3^{3-}$ ,  $XeO_3$ ,  $CIO_3^{-}$ ,  $BO_3^{3-}$  and  $SO_3^{2-}$  the non-planar species are :-(1)  $XeO_3$ ,  $CIO_3^{-}$ ,  $SO_3^{2-}$ ,  $AsO_3^{3-}$ (2)  $AsO_3^{3-}$ ,  $XeO_3$ ,  $CO_3^{2-}$ (3)  $BO_3^{3-}$ ,  $CO_3^{2-}$ ,  $SO_3^{2-}$ (4)  $AsO_3^{3-}$ ,  $BO_3^{3-}$ ,  $CO_3^{2-}$
- **28.** The type of hybrid orbitals used by chlorine atom in  $\text{ClO}^-$ ,  $\text{ClO}_2^-$ ,  $\text{ClO}_3^-$  and  $\text{ClO}_4^-$  is/are :- (1) sp, sp<sup>2</sup>, sp<sup>3</sup> and sp<sup>3</sup>d (2) sp and sp<sup>3</sup> (4) only sp
- 29. On the basis of hybridization of one s & one p orbitals they are arrange at:-
  - (1) Two orbitals mutually at 90° angle
  - (2) two orbitals mutually at 180° angle
  - (3) Two orbitals mutually at120° angle
  - (4) Two or-bitals mutually at 150° angle
- **30.** Which of the following having a square planar structure is (1)  $NH^{4+}$  (2)  $BF_4^-$  (3)  $XeF_4$  (4)  $CCl_4$
- **31.** When p-character of hybridised orbital (formed by s amd p orbitals) Increases. Then the bond angle

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	<ul><li>(1) Decreases</li><li>(3) Becomes twic</li></ul>	e	(2) Increases (4) Remains una	altered
32.	Which orbitals ov $(1) \text{ sp}^3 - 2p$	erlap to form bond in (2) sp <sup>2</sup> - p	n OF <sub>2</sub> (3) sp- 2p	(4) p - p
33.	In compounds X,	all the bond angles a	re exactly 109°8'. X is	:
	(l) Chlormethane		(2) Carbon tetra	chloride
	(3) Iodoform		(4) Chloroform	

34.	Among the following orbitals bonds,	the angle is minimum between :
	(1) $sp^3$ bonds	(2) $p_x$ arid $p_y$ orbitals
	(3) H–O–H bond in water	(4) sp bonds

35.	The structure and hybridization of Si(CH <sub>3</sub> ) <sub>4</sub> is :		
	(1)bent, sp	(2) trigonal, $sp^2$	
	(3) octahedral, $sp^{3}d$	(4) tetrahedral, $sp^3$	

36 The AsF<sub>5</sub> molecule is trigonal bipyramidal. The hybrid orbitals used by the As atoms for bonding are:(1) I are the second of the second

(1) $d_{x^2-y^2}, d_{z^2}, s, p_x, p_y$	$(2) a_{xy}, s, p_x, p_y, p_z$
(2) s, $p_x$ , $p_y$ , $p_z$ , $d_{z^2}$	(4) $d_{x^2-y^2}$ , s, p <sub>x</sub> , p <sub>y</sub>

**37.** When the hybridization state of carbon atom changes from  $sp^3$ ,  $sp^2$  and sp, the angle between the hybridized orbitals.

(1) decrease considerably	(2) increase progressively
(3) decrease gradually	(4) all of these

**38.** The hybridization states of the central atoms of the ions  $(I_3^-, . ICl_4^- \text{ and } ICl_2^- \text{ are respectively} :$ (1) sp<sup>2</sup>, dsp<sup>2</sup>, sp<sup>3</sup>(3) sp<sup>3</sup>d, sp<sup>3</sup>d, dsp<sup>2</sup>(4) sp, sp, dsp<sup>2</sup>

- **39.** Molecular shapes of SF<sub>4</sub>, CF<sub>4</sub> and XeF<sub>4</sub> are :-
  - (1) The same, with 2, 0 and 1 lone pairs of electrons respectively
  - (2) The same, with 1, 1 and 1 lone pairs of electrons respectively
  - (3) Different, with 0, 1 and 2 lone pairs of electrons respectively
  - (4) Different, with 1, 0 and 2 lone pairs of electrons respectively

40. Which of the following two are isostructural :-(1)  $XeF_2$ ,  $IF_2^-$  (2)  $NH_3$ ,  $BF_3$ (3)  $CO_3^{2-}$ ,  $SO_3^{2-}$  (4)  $PCl_5$ ,  $ICl_5$ 

**41.** Select the correct matching :

List ]	[		List II
A :	XeF4	1.	Pyramidal

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	B :	XeF6			2.	T-sha	pe			
	C :	XeO <sub>3</sub>			3.	Distor	rted octahed	ral		
	D :	XeOF	2 D	C	4. D	Squar	e planar			
	(1)	A A	В 2		D 2					
	(1) (2)	4	3 2	1	2 1					
	(2) (3)	1	2 1	3	4 1					
	(3) (4)	$\frac{2}{4}$	1	3	2					
	(1)		1	5	2					
42.	Which comp (1) Xe (3) Xe	h one c ound an $eF_4$ , $sp^3$ $eF_2$ , $sp^3c$	of the a d hybri d	followin idizatior	ng pair n state or	is a co f xenon	orrect with a in it : (2) XeF <sub>2</sub> , a (4) XeF <sub>4</sub> , a	respect to sp sp <sup>2</sup>	molecular form	ula of xenon
43.	The x	enon co	mpoun	d(s) that	t are iso	-structu	ral with			
	IBr <sub>2</sub>	and BrC	$)_3$ resp	ectively	are :	Structe				
	(1) Li	near Xe	$F_2$ and	pyramic	dal XeO	3	(2) Bent X	$eF_2$ and py	yramidal XeO <sub>3</sub>	
	(2) Be	ent XeF	$\frac{1}{2}$ and p	lanar Xe	$eO_3$	5	(4) Linear	$XeF_2$ and	tetrahedral XeO	) <sub>3</sub>
44.	Whic	h statem	ent is c	correct						
	(1) A	ll the co	mpoun	ds havir	ng polar	bonds,	have dipole	moment		
	(2) SC	$D_2$ is not	n-polar							
	(3) H <sub>2</sub>	$_{2}O$ mole	cule is	noon po	olar, hav	ving pol	ar bonds			
	(4) PI	$H_3$ is pol	ar mol	ecule ha	iving no	n polar	bonds			
45	D <sub>2</sub> E	<b>h</b>	مانعماء				haa a dinal		<b>h</b>	
45.	(1) W	nas zero	in a an	e momer	nt where	e as $H_2C$	) has a dipol	le moment	because :-	
	(1) w (2) H	$\Omega$ is be	nt							
	$(2) \Pi_2$ (3) F	is more	electro	negative	e than O	)				
	(4) H	vdrogen	bondi	negative 1g is pre	sent in l	H <sub>2</sub> O				
	( )	,		-8 1		2 -				
46.	Whic	h of the	follow	ing spec	vies are s	symmet	rical :-			
	(a) Xe	eF <sub>4</sub>		01	(b) Xe	$eF_6$				
	(c) S(	$D_2$			(d) NH	$H_3^{+2}$				
	Corre	ct answ	er is:-							
	(1) a a	and b		(2) ba	ind c		(3) c and c	1	(4) a and d	
47.	Whick	h of the	follow	ing mole	ecule ha	ve zero	dipole mon	nent:-		
	(1) BI	<b>r</b> '3		(2) CI	$H_2CI_2$		(3) $NF_3$		(4) $SO_2$	
19	The d	incla m	omont	of NU						
40.	(1) I a	ipole III	dinole	rnomen	18 t of NCI	1.	(2) Higher	than dino	le moment of N	Cl.
	(1) Le	ual to f	uipoie he dinl		t  of  NC	וז רו	(2) Higher $(4)$ None $(4)$	of these		
	(3) E(		ne uipi			-13		n mese		
49.	Whiel	h of the	follow	ing orde	er of pole	arities o	of molecules	is correct.	-	
•/•	(1) H	F > NH	$_{3} > PH_{2}$		- 01 P01		$(2) CH_4 >$	$NH_3 > H_2$	0	
	(3) Cl	$H_3Cl < 0$	CH <sub>2</sub> Cl <sub>2</sub>	< CHC	13		(4) $BF_3 > 1$	$BeF_2 > F_2$	-	
	(-) 01		22		5		(-)== ; > :	2 2		

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50.	Which set of mol	ecules is polar :-							
	(1) $\operatorname{XeF}_4$ , $\operatorname{IF}_7$ , $\operatorname{SO}_2$ (3) $\operatorname{SnCl}_2$ $\operatorname{SO}_2$ N	$\frac{3}{102}$	(2) $PCl_5, C_6H_6,$ (4) $CO_2, CS_2, C$	SF <sub>6</sub>					
	(0) 211012, 202, 1		(1) 0 0 2, 0 2 2, 0	20					
51.	Which set of mol	ecules is polar :-							
	(1) $PCI_3$	(2) $CH_2Cl_2$	(3) $CHCl_3$	(4) $\operatorname{CCl}_4$					
52.	Species having ze	ero dipole moment	::-						
	(1) $XeF_4$	-	(2) 1,2,4 trichloro benz	ene					
	(3) SF <sub>4</sub>		$(3) \operatorname{CH}_2 \operatorname{Cl}_2$						
53.	<ul> <li>What conclusion can be drawn from the fact that BF<sub>3</sub> has no dipole moment but PF<sub>3</sub> does</li> <li>(1) BF<sub>3</sub> is not Symmetrical but PF<sub>3</sub> is</li> <li>(2) BF<sub>3</sub> molecule must be linear</li> <li>(3) Atomic radius of P is larger than that of B</li> <li>(4) BF<sub>3</sub> molecule must be planar triangular</li> </ul>								
54.	<ul> <li>PCl<sub>5</sub> is non polar because :</li> <li>(1) P–Cl bond is non-polar</li> <li>(2) Its dipole moment is zero</li> <li>(3) P–Cl bond is polar</li> <li>(4) P &amp; Cl have equal electronegativity</li> </ul>								
55.	Dipole moment of $(1)$ Carbon and or $(2)$ Carbon has no $(3)$ CO <sub>2</sub> is a linea $(4)$ Carbon has be	f CO <sub>2</sub> is zero whick xygen have equal explored by the second second by the second by the second by the second by the second moments of zero and second secon	ch implies that: electronegativities ero value						
56.	The correct order (1) $CH_4 < NF_3 < 1$ (2) $NF_3 < CH_4 < 1$ (3) $NH_3 < NF_3 < 1$ (4) $H_2O < NH_3 < 1$	of dipole moment $NH_3 < H_2O$ $NH_3 < H_2O$ $CH_4 < H_2O$ $NF_3 < CH_4$	is :						
57.	Which of the follo (1) H <sub>2</sub> S	owing molecule do (2) SO <sub>2</sub>	bes not possess a permane (3) $SO_3^{2-}$	ent dipole moment : (4) CS <sub>2</sub>					
58.	Which of the follo (1) HCl	owing has the high (2) HF	nest value of dipole mome (3) HI	ent : (4) HBr					
		MOLECU	LAR ORBITAL THEO	RY					
59.	The ion that is iso	electronic with Co	O and having same bond	order is :					
	(1) $CN^{-}$	(2) $O_2^+$	(3) $O_2^+$	(4) $N_2^+$					

**60.** Which of the following is paramagnetic:-

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	(1) $O_2^-$	(2) CN <sup>-</sup>	(3) CO	(4) NO <sup>+</sup>				
61.	In the following whice (a) $N_2$ (b) CC Correct answer is :	ch of the two are param D (c) $B_2$	nagnetic:- (d) NO <sub>2</sub>					
	(1) a and c	(2) band c	(3) c and d	(4) band d				
62.	The bond order of CO (1) Zero	D molecule on the basi (2) 2	is of molecular orbital (3) 3	theory is (4) 1				
63.	<ul> <li>The energy of σ2s ortbital is greater, than σ1s* orbital because</li> <li>(1) σ2s orbital is bigger than σ 1s* orbital</li> <li>(2) σ 2s orbital is a ponding orbital where as σ1s* is an antibonding orbital</li> <li>(3) σ2s orbital has a greater value of n than σ1s* orbital</li> <li>(4) None</li> </ul>							
64.	The no. of antibondin (1) 4	ng electron pair in $O_2^-$ (2) 3	is. (3) 8	(4) 10				
65.	Which of the followi $(1) N_2$	ng species will have th (2) N <sub>2</sub> <sup>-</sup>	the minimum bond ener (3) $N_2^+$	$^{r}gy_{(4) N_2^{-2}}$				
66.	Which of the followi (1) $O_2^-$ (3) $N_2^+$	ng ion has not bond or	rder of 2.5 ? (2) $O_2^+$ (4) $N_2^-$					
67.	In ahomonuclear mol	ecule which of the fol	lowing set of orbitals	are degenerate ?				
	(1) $\sigma_{2s}$ and $\sigma_{1s}$		(2) $\pi_{2p_x}$ and $\pi_{2p_y}$					
	(3) $\pi_{2p_x}$ and $\sigma_{2p_z}$		(4) $\sigma_{2p_z}$ and $\pi^*_{2p_x}$					
		COORDIN	NATE BOND					
68.	In Co-ordinate bond,	the acceptor atoms m	ust essentially contain	in its valency shell an orbital:				
	(1) With paired electron (3) With no electron	ron	(2) With single elect (4) With three electr	ron				
			(1) White the clock					
69.	The bonds present in	$N_2O_5$ are :		1				
	(1) Only ionic (3) Only covalent		(2) Covalent & coor (4) Covalent & ionic	ainate				
-0								
70.	Dative bond is preser	nt in	(2) NH <sub>2</sub>					
	(3) $K_2CO_3$		(4) $BF_3$					
71.	Which of the followi	ng has no coordinate h	oond?					
	(1) $PH_3$		(2) $P_2 H_6^{+2}$					
	(3) $P_2H_5$		(4) (4) $PH_4^+$					
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72.The compound containing co-ordinate bond is :(1) H<sub>2</sub>SO<sub>4</sub>(2) O<sub>3</sub>(3) SO<sub>3</sub>(4) All of these

		WEAL FORCES
73.	In dry ice the bond present be	tween two molecules is
	(1) Ionic bond	(2) Covalent bond
	(3) Hydrogen bond	(4) Vander Waal

- 74.Intermolecular hydrogen bonds are not present in:-<br/>(1)  $CH_3CH_2OH$ <br/>(3)  $C_2H_5NH_2$ (2)  $CH_3COOH$ <br/>(4)  $CH_3OCH_3$
- 75. In which of the following molecule, the shown hydrogen bond is not possible:-



81.	Strongest hydrogen bond is shown by: (1) Water (3) Hydrogen fluoride	(2) Ammonia (4) Hydrogen sulphide						
82.	<ul> <li>(b) Hydrogen Huoride</li> <li>Density of ice is less than that of water because of</li> <li>(1) presence hydrogen bonding</li> <li>(2) crystal modification of ice</li> <li>(3) open porous structure of ice due to hydrogen bonding</li> <li>(4) different physical states of these</li> </ul>							
83.	NH <sub>3</sub> has abnormally high boiling point bec (1) Alkaline nature (3) $sp^3$ – Hybridisation	use it has: (2) Distorted shape (4) Hydrogen bonding						
84.	Which of the following is soluble in water $(1) CS_2$ (2) C <sub>2</sub> H <sub>5</sub> OH	(3) $CCl_4$ (4) $CHCl_3$						
85.	KF combines with HF to form KHF <sub>2</sub> . The $(1) \text{ K}^+, \text{ F}^- \text{ and } \text{ H}^+$ (3) K <sup>+</sup> and [HF <sub>2</sub> ] <sup>-</sup>	compound contains the species : (2) K <sup>+</sup> , F <sup>-</sup> and HF (4) [KHF)+ and F <sub>2</sub>						
86.	Which of the following compounds show in (A) o – nitrophenol (C) phenol (1) A & B (2) A & C	ntramolecular hydrogen bonding : (B) p - nitrophenol (D) salicylaldehyde (3) A & D (4) B & C						
87.	The pair of molecules forming strongest hy (1) SiH <sub>4</sub> and SiF <sub>4</sub> (3) $H$ -C-OH and CH <sub>3</sub> -C-OH 0 0	drogen bonds are: (2) $CH_3$ CCH <sub>3</sub> and $CHCl_3$ (4) $H_2O$ and $H_2$						
00	IONIC Which are in the same of states and suith and	C BOND						
88.	<ul> <li>Which one is the correct statement with reference to solubility of MgSO<sub>4</sub> in water :</li> <li>(1) Hydration energy of MgSO<sub>4</sub> is higher in comparison to its lattice energy</li> <li>(2) Ionic potential of Mg<sup>2+</sup> is very low</li> <li>(3) SO<sub>4</sub><sup>2-</sup> ion mainly contributes towards hydration energy</li> <li>(4) Size of Mg<sup>2+</sup> and SO<sub>4</sub><sup>2-</sup> are similar</li> </ul>							
89.	Conditions for ionic bond formation is/are (a) Small cation, large anion (b) Low IP of cation, high electron affinity of anion (c) Large cation, small anion and less charge (d) Less lattice energy Correct answer is: (1) a d (2) b c and d (3) b and c (4) a b							
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90.	Capacity of solvent to neutralise charge on ionic compound is called:								
	(1) Solvation energy (3) Dipole moment	(2) Dielectric constant (4) Solubility							
91.	The force responsible for dissolution of ion (1) Dipole- dipole forces	(2) Ion - dipole force	18 -						
	(3) Ion- ion force	(4) Hydrogen bond							
92.	Born Haber cycle is mainly used to determi	ne							
	(1) Lattice energy	(2) Electron affinity							
	(3) Ionisation energy	(4) Electronegativity							
93.	An ionic compound $A^+ B^-$ is most likely to	be formed when							
	<ul><li>(1) Ionization energy of A is low</li><li>(3) Electron affinity of B is low</li></ul>	(2) Electron affinity (4) Both (1) and (2)	of B is high						
		(1) Both (1) and (2)							
94.	The pair of elements which on combination (1) Na and Ca (2) K and O	are most likely to form	n an ionic compound is $(A)$ Al and I						
95.	Choose the compound of each of the follow (a) $PaSO = PaSO$ (b) $NaCl Ma$	ving pairs that has the r	nore solubility in water :-						
	(c) AgCl, AgI	<u>JC12</u>							
	(1) $BeSO_4$ , $MgCl_2$ , $AgI$	(2) $BeSO_4$ , $NaCl, Ag$	gCl						
	(5) BaSO <sub>4</sub> , NaCI, AgCI	(4) $BasO_4$ , $MgCl_2$ , A	\g1						
96.	Highest melting point would be of								
	(1) AICI <sub>3</sub> (2) LICI	(3) NaCI	(4) $BeCl_2$						
97.	Which of the following substance will have	highest b.p.t. ?							
	(1) He (2) CsF	$(3) \mathrm{NH}_3$	(4) $CHCl_3$						
98.	As compared to covalent compounds electr	ovalent compounds ge	nerally possess						
	(1) High m.p. and high b.p. (3) Low m p and high b p	(2) Low m.p. and low b.p. (4) High m p. and low b p							
99.	The electronic configuration of metal M is $(1) MO$ (2) M <sub>2</sub> O	$1s^2 2s^2 2p^0 3s^1$ . The for (3) M <sub>2</sub> O <sub>2</sub>	(4) MO <sub>2</sub>						
		(3) 111203	(1) 1102						
100.	Which of the following pairs will form the (1) Na and Cl	most stable ionic bond (2) Mg and F	?						
	(3) Li and F	(4) Na and F							
101.	For two ionic solids, CaO and KI. Identify	the wrong statement ar	nong the following :						
	(2) KI is soluble in benzene	an mat of KI							
	(3) CaO has higher melting point								
	(4) <b>NI</b> has lower melting point								

102.	Which of the follow (1) diamond	ing does not show elec	(2) graphite						
	(3) sodium chloride	(fused)	(4) potassium						
103.	The most covalent h	alide is:-							
	(1) $AlF_3$	(2) AlCl <sub>3</sub>	(3)AlBr <sub>3</sub>	(4) $AlI_3$					
104.	Ionic potential (φ) compound:-	of electropositive ele	ement will be highest	t in which of the following					
	(1) CsCl	(2) $MgCl_2$	(3) $AlF_3$	$(4) \operatorname{SF}_6$					
105.	<ul> <li>LiCl is soluble in organic solvent while NaCl is not because:-</li> <li>(1) Lattice energy of NaCl is less than that of LiCl</li> <li>(2) Ionisation potential of Li is more than that of Na</li> <li>(3) Li<sup>+</sup> has more hydration energy than Na<sup>+</sup> ion</li> <li>(4) LiCl is more covalent compound than that NaCl.</li> </ul>								
106.	The most stable carb	oonate is							
	(1) $Li_2CO_3$	(2) $BeCO_3$	$(3) CaCO_3$	$(4) BaCO_3$					
107.	Correct order of cov (1) BeCl <sub>2</sub> < MgCl <sub>2</sub> < (3) BeCl <sub>2</sub> > MgCl <sub>2</sub> >	alent character of alkal < CaCl <sub>2</sub> < SrCl <sub>2</sub> I > CaCl <sub>2</sub> > SrCl <sub>2</sub>	ine earth metal chlorid (2) $BeCl_2 < CaCl_2 <$ (4) $SrCl_2 > BeCl_2 > 0$	e in Sr $Cl_2 < MgCl_2$ Ca $Cl_2 > MgCl_2$					
108.	Which of the compo (1) AgF	ound is least soluble in (2) AgCl	water (3) AgBr	(4) AgI					
109.	CCl <sub>4</sub> is more covale (1) There is more po (2) There is more po (3) CCl <sub>4</sub> has more w (4) None of above	nt than LiCl because : plarization of Cl in CCl plarization of Cl in LiCl reight	4 L						
110.	The M.P. of SnCl <sub>4</sub> is (1) There is more ch	s less than that of SnCl arge on Sn <sup>+4</sup>	<sup>2</sup> , the suitable reason for (2) The size of $\operatorname{Sn}^{+4}$ i	or the observed fact is small					
	(3) Ionic potential of	$f \operatorname{Sn}^{+4}$ is high	(4) The shape of SnC	$Cl_4$ is tetrahedral					
111.	The correct order of (1) CΓ, Br <sup>-</sup> _, Γ, F <sup>-</sup> (3) F <sup>-</sup> , CΓ, Br <sup>-</sup> , Γ	decreasing polarisable	ions is: (2) F <sup>-</sup> , Γ, Br <sup>-</sup> , Cl <sup>-</sup> (4) Γ, Br <sup>-</sup> , CΓ, F <sup>-</sup>						
112.	Ionic conductances of (1) $\text{Li}^{+}(aq) > \text{Na}^{+}(aq)$ (2) $\text{Li}^{+}(aq) > \text{Na}^{+}(aq)$ (3) $\text{Li}^{+}(aq) > \text{Na}^{+}(aq)$ (4) $\text{Li}^{+}(aq) < \text{Na}^{+}(aq)$	of hydrated $M^+$ ions are $  > K^+ (aq) > Rb^+ (aq)$ $  > K^+ (aq) < Rb^+ (aq)$ $  > K^+ (aq) > Rb^+ (aq)$ $  > K^+ (aq) < Rb^+ (aq)$	e in the order- > $Cs^+(aq)$ < $Cs^+(aq)$ < $Cs^+(aq)$ < $Cs^+(aq)$						
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113.	Which of the followi	ng halides has the high	alides has the highest melting point-					
	(1) NaCl	(2) KCl	(3) NaBr	(4) NaF				
114.	Which of the followi	ng does not give an ox	ide on heating					
	(1) $MgCO_3$	(2) $Li_2CO_3$	(3) $ZnCO_3$	(4) $K_2CO_3$				
115.	Which decomposes of	on heating-						
	(1) NaOH	(2) KOH	(3) LiOH	(4) RbOH				
116.	Which of the followi	ng forms metal oxide o	on heating					
	(1) $Na_2CO_3$	(2) $Li_2CO_3$	$(3) \mathrm{K}_2 \mathrm{SO}_4$	(4) NaHCO <sub>3</sub>				
117.	Increasing order of s	tability of-						
	I. K <sub>2</sub> CO <sub>3</sub> II. Mg	gCO <sub>3</sub> III. Na <sub>2</sub> CO <sub>3</sub>						
	(1) $I < II < III$		(2) II < III < I					
	(3) $II < I < III$		(4) I < III < II					
118.	Which of the followi	ng carbonate will not c	lecompose on heating :	-				
	(1) $BaCO_3$	(2) $ZnCO_3$	(3) $Na_2CO_3$	(4) $Li_2CO_3$				
119.	The decomposition to	emperature is maximu	n for:-					
	(1) $BeCO_3$	(2) CaCO <sub>3</sub>	(3) $K_2CO_3$	(4) $Li_2CO_3$				

## ANSWER KEY

			A										
						EXER	CISE	I					
1.	(3)	2.	(3)	3.	(3)	4.	(3)	5.	(3)	6.	(4)	7.	(2)
8.	(4)	9.	(1)	10.	(4)	11.	(3)	12.	(4)	13.	(1)	14.	(2)
15.	(4)	16.	(3)	17.	(3)	18.	(2)	19.	(1)	20.	(3)	21.	(3)
22.	(4)	23.	(1)	24.	(4)	25.	(2)	26.	(2)	27.	(1)	28.	(3)
29.	(2)	30.	(3)	31.	(1)	32.	(1)	33.	(2)	34.	(2)	35.	(4)
36.	(3)	37.	(2)	38.	(2)	39.	(4)	40.	(1)	41.	(1)	42.	(3)
43.	(1)	44.	(4)	45.	(2)	46.	(4)	47.	(1)	48.	(2)	49.	(1)
50.	(3)	51.	(4)	52.	(1)	53.	(4)	54.	(2)	55.	(3)	56.	(1)
57.	(4)	58.	(2)	59.	(1)	60.	(1)	61.	(3)	62.	(3)	63.	(3)
64.	(2)	65.	(4)	66.	(1)	67.	(2)	<b>68.</b>	(3)	69.	(2)	70.	(1)
71.	(1)	72.	(4)	73.	(4)	74.	(4)	75.	(3)	76.	(2)	77.	(2)
78.	(4)	79.	(2)	80.	(1)	81.	(3)	82.	(3)	83.	(4)	84.	(2)
85.	(3)	86.	(3)	87.	(3)	88.	(1)	<b>89.</b>	(3)	<b>90.</b>	(2)	91.	(2)
92.	(1)	93.	(4)	94.	(2)	95.	(2)	96.	(3)	97.	(2)	<b>98.</b>	(1)
99.	(2)	100.	(2)	101.	(2)	102.	(1)	103.	(4)	104.	(4)	105.	(4)
106.	(4)	107.	(3)	108.	(4)	109.	(1)	110.	(3)	111.	(4)	112.	(4)
113.	(4)	114.	(4)	115.	(3)	116.	(2)	117.	(2)	118.	(3)	119.	(3)

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