DPP EXERCISE NEET INORGANIC CHEMISTRY BY JITENDRA HIRWANI

p-Block (Carbon & Boron Family)



Plot No. 38, Near Union Bank of India, Rajeev Gandhi Nagar, Kota, Rajasthan – 324005 Mob. : 9214233303

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DPP-1

1.	On moving down the group 13 density				
	(1) Increases		(2) Decreases		
	(3) First decreases then in	ncreases	(4) Remains same		
Ans.	(1)				
2.	High melting point of bo	ron is due to its existence as			
	(1) Small covalent molecule		(2) Giant covalent molecu	le	
	(3) Giant covalent solid		(4) Giant ionic molecule		
Ans.	(3)				
3.	Elements of group 13 ma	inly form covalent compoun	ds because		
	(1) Size of ions is small		(2) Sum of three ionization energies is very high		
	(3) Electronegativity values are high		(4) All of these		
Ans.	(4)				
4.	Oxidation state shown by	group 13 elements is			
	(1) + 1 and $+ 3$	(2)+1,+2 and $+3$	(3)+2,+3 and $+4$	(4) + 1 and $+ 4$	
Ans.	(1)				
5.	Which one of the following	ng elements of group 13 can	react with alkali solutions	to give H ₂ gas ?	
	(1) Boron	(2)Aluminium	(3) Gallium	(4) All of these	
Ans.	(4)				
6.	Lewis acid character of b	oron trihalides is as follows			
	$(1) BI_3 > BBr_3 > BCl_3 > BF_3$		(2) $BF_{3} > BCl_{3} > BBr_{3} > BI_{3}$		
	$(3) BCl_3 > BF_3 > BBr_3 > BI_3$	3	$(4) BI_3 > BBr_3 < BF_3 < BCl_3$;	
Ans.	(1)				
7.	Dimer Al_2Cl_6 is formed because				
	(1) Al is electron rich				
	(2) Aluminium is having lone pair of electron				
	(3) Aluminium forms coordinate bonds with chlorine to complete its octet				
	(4) Aluminium donates	lone pair to form bridge			
Ans.	(3)				
8.	When we heat borax stron	ngly then it will yield the fol	lowing compound		
	(1) NaBO ₂	(2) B_2O_3	$(3) \operatorname{Na}_{2} \operatorname{B}_{4} \operatorname{O}_{7}$	(4) Both (1) & (2)	
Ans.	(4)				
9.	$B(OH)_3$ accept how many	vOH ⁻ ions?			
	(1)1	(2) 2	(3) 3	(4) 4	
Ans.	(1)				
10.	Boric acid is having a po	lymeric type structure becau	use of its		
	(1) Basic nature	(2) Acidic nature	(3) Hydrogen bonds	(4) Co-ordinate bonds	
Ans.	(3)				
11.	The correct statement is				
	(1) Diamond is covalent yet it has high melting point				
	(2) $[SiF_6]^{2-}$ is known whereas $[SiCl_6]^{2-}$ is not				
	(3) SiO only exist at high temp.				
	(4) All of these				
Ans.	(4)				

		1	JPP-2			
1.	Select the incorrect st	atement for B_2H_6				
	(1) It contains B–B io	nic bond	(2) Each boron is sp ³ l	hybridised		
	(3) It has two types o	f hydrogen bonds	(4) All of these			
Ans.	(1)					
2.	In diborane each bor	on forms				
	(1) Two bonds	(2) Three bonds	(3) Four bonds	(4) Five bonds		
Ans.	(3)					
3.	Which one of the follo	owing compounds has simil	ar structure to that of graph	ite?		
	(1) Boron nitride	(2) Boron carbide	(3) Aluminium oxide	(4) Aluminium carbide		
Ans.	(1)					
4.	The number of sigma	and pi bonds present in ino	rganic benzene are respecti	vely		
	(1) 3σ, 12π	(2) 12σ, 3π	(3) 3σ, 3π	(4) 12σ, 12π		
Ans.	(2)					
5.	Aluminium is used fo	r making alloys because of i	ts			
	(1) Resistance to corrosion		(2) Poor conductivity	(2) Poor conductivity		
	(3) Heaviness		(4) All of these			
Ans.	(1)					
6	Tendency of carbon 1	for catenation is because ca	arbon-carbon atom bond er	nergy is		
	(1) Low	(2) High	(3) Zero	(4) Negative		
Ans.						
7.	(1) Due to cheepe of	All elements except carbon have tendency to show maximum covalency of six				
	 Due to absence of vacant d-orbitals Due to presence of vacant d-orbitals 					
	 (2) Due to presence of partially filled d orbitals (3) Due to presence of partially filled d orbitals 					
	 (4) Due to presence of completely filled d-orbitals 					
Ans.	(1) Due to presence ((2)	si compietely mieu u orona	10			
8.	Most abundant metal	by mass in earth crust is				
	(1) Silicon	(2) Germanium	(3)Aluminium	(4) Arsenic		
Ans.	(3)					
9.	Which one of the follo	Which one of the following elements is a metalloid?				
	(1) Carbon	(2) Germanium	(3) Lead	(4) All of these		
Ans.	(2)					
10.	On moving down the	group, acidic nature of oxid	es of group 14			
	(1) Decreases	(2) Increases	(3) Remains same	(4) Increases then decreases		
Ans.	(1)					
11.	$SiO_2 + NaOH \rightarrow ?$					
	$\text{SiO}_2 + \text{HF} \rightarrow ?$					
	The products of (ii) & (i) respectively are					
	$(1) H_2 SiF_6, SiO_4^{-4}$	(2) SiF_4 , $\operatorname{Na}_2\operatorname{SiO}_3$	(3) Na ₂ SiO ₃ , SiF ₄	$(4) \operatorname{Na}_2 \operatorname{SiO}_4, \operatorname{H}_2 \operatorname{SiF}_6$		
Ans.	(2)					

		DP	P-3				
1.	oπ bonding ?						
	(1) Carbon	(2) Silicon	(3) Germanium	(4) Tin			
Ans.	(1)						
2.	Allotropy is due to						
	(1) Difference in the num	(1) Difference in the number of atoms in the molecules.					
	(2) Difference in the arr	(2) Difference in the arrangement of atoms in the molecules in the crystal.					
	(3) Difference in chemic	al properties.					
	(4) All of these.						
Ans.	(2)						
3.	In diamond, carbon have						
	(1) sp ³ hybridisation	(2) sp hybridisation	(3) sp^2 hybridisation	(4) sp ³ d ² hybridisation			
Ans.	(1)						
4.	Graphite has						
	(1) 2-D sheet structure						
	(2) Van der W ls forces	(2) Van der W ls forces between different layers					
	(3) sp^2 hybridised carbo	(3) sp^2 hybridised carbon linked with other three carbon atoms in hexagonal planar structure					
	(4) All of these						
Ans.	(4)						
5.	In graphite, the bond is						
	(1) Ionic	(2) Covalent	(3) Co-ordinate	(4) Metallic			
Ans.	(2)						
6.	Which one of the following is properties of CO gas ?						
	(1) It is a colourless gas		(2) It is an odourless gas				
	(3) It is a neutral oxide		(4) All of these				
Ans.	(4)						
7.	Carbonic acid is a						
	(1) Weak tribasic acid	(2) Weak dibasic acid	(3) Strong tribasic acid	(4) Strong dibasic acid			
Ans.	(2)						
8.	Organosilicon polymers of	containing Si–O–Si linkage	is called				
	(1) Silicates	(2) Silicones	(3) Glass	(4) Silica			
Ans.	(2)						
9.	SiO_4^{4-} ion has geometry						
	(1) Triangular		(2) Tetrahedral				
	(3) Pentagonal bipyramid	al	(4) Linear				
Ans.	(2)						
10.	Boron compounds behav	re as lewis acids because of	f their				
	(1) Acidic nature	(2) Covalent nature	(3) Ionisation energy	(4) Electron deficient nature			
Ans.	(4)						
11.	Calcium carbide on hydrolysis						
	(1) Ethylene	(2) Acetylene	(3) Methane	(4) Propyne			
Ans.	(2)						

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	DPP-4					
1.	The compound th	The compound that is not a lewis acid is				
	$(1)BF_3$	(2)AlCl ₃	$(3) PCl_3$	$(4) \operatorname{BCl}_{3}$		
Ans.	(3)					
2.	Borax is					
	$(1) Na_2[B_4O_5(OH)]$	$(1) \operatorname{Na}_{2}[\operatorname{B}_{4}O_{5}(\operatorname{OH})_{4}].8\operatorname{H}_{2}O$].7H ₂ O		
	$(3) Na_2[B_4O_3(OH)]$	8].6H2O	(4) $Na_2[B_4O_2(OH)_1]$	₀].5H ₂ O		
Ans.	(1)					
3.	In Diborane, the	In Diborane, the incorrect statement is				
	(1) All $6 B-H bc$	(1) All 6 B–H bond are on same plane.				
	(2) 4 B–H bonds	s are on the plane and two E	B–H bonds above and below	v the plane.		
	(3) It is the 12 e	- species				
	(4) Two BH_3 are	attached with three centre e	electron pair bond			
Ans.	(1)					
4.	On strong heating	g, boric acid yields				
	(1)B	(2) $B_2 H_6$	$(3) \operatorname{B_2O_3}$	(4) BO ₂		
Ans.	(3)					
5.	In which of the fo	ollowing reaction boron doe	s not act as reducing agent	?		
	$(1) \mathbf{B} + \mathbf{CO}_2 \rightarrow$	$(2) B + Mg \rightarrow$	$(3) B + SiO_2 \rightarrow$	$(4) B + HNO_3 \rightarrow$		
Ans.	(2)					
6. Which of the following statement is correct ?(1) Boron and aluminium halides behave as Lewis acids						
	(3) The $p\pi$ - $p\pi$ be	z -p π back bonding occurs in the halides of boron and not in those of aluminium				
	(4) All of these					
Ans.	(4)					
7.	Aluminium chlor	ride in acidified aqueous sol	ution forms			
	(1) Tetrahedral [A	$AI(H_2O)_4 J^{+3}$ 10n	(2) Octahedral [A	$I(H_2O)_4]^{+3}$ 10n		
	(3) Tetrahedral [A	$AI(H_2O)_6^{+3}$ 10n	(4) Octahedral [Al	$[(H_2O)_6]^{+5}$ 10n		
Ans.	(4)					
8.	Na.B.O	$2 \rightarrow 2NaBO + B.O.$				
	Δ	X + Y				
		Transparent				
	7 + CuO(s)	► Cu(BO)				
	$\frac{1}{2} + \frac{1}{2} + \frac{1}$					
	(1) X		(2) Y			
	(3) Mixture of X	& Y in $2 \cdot 1$ ratio	(4) Mixture of X &	y in 1 · 2 ratio		
Ans.	(2)		(.)			
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9.	Reaction of ammonia with diborane gives initially B_2H_6 . 2NH ₃ which can also be written as				
	$(1) [BH_2(NH_3)_2]^+ [BH_4]^-$	(2) $[BH_4]^+ [BH_2(NH_3)_2]^-$	(3) $[BH_{3}NH_{3}]^{+}[BH_{4}]^{+}$	(4) $[B_2N_2H_6]^+[H_3]^-$	
Ans.	(1)				
10.	Diborane can't be obtained from				
	$(1) \operatorname{Na}_2 \operatorname{B}_4 \operatorname{O}_7 + \operatorname{HCl}$	(2) $NaBH_4 + I_2$	(3) $BF_3 + LiAlH_4$	(4) $BF_3 + NaH$	
Ans.	(1)				
11.	Carbon suboxide has the	formula			
	(1) H ₂ CO ₃	$(2)C_{2}O_{3}$	$(3)C_{3}O_{2}$	(4) CO	
Ans.	(3)				

TOOGINIDIA

	DPP-5				
1.	White fumes appear around the bottle of anhydrous AlCl ₃ due to				
	(1) Decomposition of A	ICl ₃	(2) Hydrolysis of AlCl ₃ liberating H_2 gas (4) Hydrolysis of AlCl ₃ liberating HCl gas		
	(3) Hydrolysis of AlCl ₃	liberating Cl ₂ gas			
Ans.	(4)	-		-	
2.	Number of hydroxyl gro	up attached to Boron in B	orax are		
	(1) Four	(2) Five	(3)Six	(4) Ten	
Ans.	(1)				
3.	The correct match is				
	(1) C_{co} – Buckminster fullerene		(2) Na ₂ B ₄ O ₂ .4H ₂ O – Kernite		
	(3) Borazole $-B_3N_3H_6$		(3) All of these		
Ans.	(4)				
4.	The correct match is				
	$(1) B(OH)_3$ - basic		(2) SnO, PbO – amph	oteric	
	(3) GeO ₂ – basic		(4) PbO ₂ – only acidi	c	
Ans.	(2)		-		
5.	C - O bond length is max	kimum in			
	(1) CH ₃ CHO	(2) CO ₂	(3) CO	$(4) CO_3^{2-}$	
Ans.	(4)	-		-	
6.	Dry ice is composed of				
	(1) Solid He	(2) Solid CO_2	(3) Solid SO ₂	(4) Solid $C_6 H_6$	
Ans.	(2)				
7.	The metallic character of	f group 14			
	(1) Decreases from top	to bottom	(2) Increases from top to bottom		
	(3) Does not change gr	adually	(4) Metallic characte	er is not seen	
Ans. o	(2)	dan arrita altarri 10 arridati		f	
0.	(1) $Ge \leq Sn \leq Pb$	(2) Pb \leq Sn \leq Ge	(3) $Sn < Ge < Ph$	(1) Sn < Ph < Ga	
Ans.	(1) (1)	(2)10 < 511 < 60		(4) 511 × 10 × 60	
9.	Which one of the follow	ving is correct statement o	f fullerenes –C.,?		
	(1) Fullerenes are mad	e by heating of graphite	in an electric arc in the p	resence of Hydrogen.	
	(2) Fullerenes are the	only impure form of carb	on due to presence of dat	ngling bonds	
	(3) Both (1) & (2)				
	(4) It contains twenty s	six-membered rings and t	welve five membered ring	<u>3</u> S.	
Ans.	(4)				
10.	The mixture of CO & H	is known as			
	(1) Water gas or produc	er gas	(2) Water gas or syn	thesis gas	
	(3) Synthesis gas or producer gas (4) Producer gas				
Ans.	(2)	ot stable elletrone of as it	onic		
11.	(1) Eullerer e	(2) Diamond	$(2) C_{max} h_{itc}^{itc}$	(A) A 11 and a second 11	
A	(1) runerene	(2) Diamond	(3) Graphite	(4) All are equally stable	
Ans.	(3)				

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1.	When SiCl ₄ is allowed to undergo hydrolysis it gives					
	(1) SiO_2 – Silicic acid	(2) $Si(OH)_4$ – Silicic acid				
	(3) $Si(OH)Cl_3 - Silicic acid$	(4) $SiCl_4$ do not undergo	hydrolysis			
Ans.	(2)					
2.						
	(1) Tin mainly occurs as Cassiterite, SnO_2					
	(2) Silicon is the third most abundant element on e	(2) Silicon is the third most abundant element on earth's crust				
	(3) Only two isotopes of carbon are present C^{12} and C^{13}					
	(4) Germanium is most abundant than other memb	ers of carbon family				
Ans.	(1)					
3.	$p\pi$ - $p\pi$ multiple bond is seen in					
	(1) Mostly carbon	(2) All carbon family men	(2) All carbon family member			
	(3) Sn but not in carbon	(4) Boron family and not in carbon family				
Ans.	(1)					
4.	$A + CO \rightarrow CO_2$					
	$B + CO \rightarrow CO_2$					
	$X + O_2 \rightarrow CO_2$					
	(1) CH_4 , carbon, Fe_2O_3 (2) Fe_2O_3 , ZnO, CH_4	$(3) \operatorname{Fe}_{2}O_{3}, \operatorname{CH}_{4}, \operatorname{ZnO}$	(4) HCOOH, carbon, CH_4			
Ans.	(2)					
5.	The geometry of $SiCl_4$ is					
	(1) Tetrahedral (2) Square planar	(3) Octahedral	(4) Planar triangular			
Ans.	(1)					
6.	The silicates which contain discrete tetrahedral uni	ts are				
	(1) Sheet silicates	(2) Ortho silicates				
A ma	(3) Three dimensional silicates	(4) Pyrosilicates				
Alls.						
7.	$CH_{3}CI + Si \xrightarrow{Cu \text{ Powder}}{570 \text{ K}} (X) \xrightarrow{2H_{2}O} (Y)$					
	(y) & (x) respectively are					
	(1) (CH ₃) ₂ SiCl ₂ , (CH ₃) ₂ Si(OH) ₂	$(2) (CH_3)_2 Si(OH)_2, (CH_3)_2 Si(OH)_2$	SiCl ₂			
	(3) SiCl ₄ , Si(OH) ₄	$(4) \operatorname{Si(OH)}_4, \operatorname{SiCl}_4$				
Ans.	(2)					

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8. Hydrolysis of dimethyldichloro silane ; (CH₃)₂SiCl₂ followed by condensation polymerisation yields straight chain polymer of







Ans. (3)

9. Silicons are

- (1) Water repelling in nature
- (3) With high dielectric strength
- Ans. (4)
- **10.** Which one is correct statement for zeolite ?
 - (1) They are alumino silicates
 - (2) Hydrated zeolites are used as ion exchangers in hardening of soft water
 - (3) ZSM-5 is used to convert gasoline to alcohol
 - (4) All of these
- Ans. (1)

- (2) With high thermal stability
- (4) All of these



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