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			(b) Chromyl chloride vapours are evolved
			(c) Cl_2 is evolved
			(d) No reaction takes place
	Objective Questions	12.	Which of the following does not illustrate the anomalous properties of lithium [MP PET 1993]
	Alkali metals		(a) The melting point and boiling point of Li are comparatively high
			(b) Li is much softer than the other group 1 metals
1.	As compared to potassium, sodium has [MP PMT 1985]		(c) Li forms a nitride Li_3N unlike group 1 metals
	(a) Lower electronegativity		(d) The ion of <i>Li</i> and its compounds are more heavily hydrated
	(b) Higher ionization potential		than those of the rest of the group
	(c) Greater atomic radius	13.	Correct order of increasing activity is
•	(d) Lower melting point Retactive is kept in		(a) Cu, Mg, Na (b) Na, Mg, Cu
2.	(a) Alcohol (b) Water		(c) Mg , Na , Cu (d) Cu , Na , Mg
	(c) Kerosene (d) Liquid ammonia	14.	On heating anhydrous Na_2CO_3 , is evolved
2	The product obtained on fusion of $BaSO_{a}$ and $Na_{a}CO_{a}$ is		[CPMT 1971, 79]
J.			(a) CO ₂ (b) Water vapour
	(a) $BaCO_2$ (b) BaO_2		(c) CO (d) No gas
		15.	Chile saltpetre is [DPMT 1984: CPMT 1986. 89:
	(c) $Ba(OH)_2$ (d) $BaHSO_4$	•	CET Pune 1998; MP PMT 2003]
4.	Which of the following statement is correct regarding alkali metals		(a) $NaNO_3$ (b) Na_2SO_4
	(a) Cation is less stable than the atom		$(c) KNO \qquad (d) Na SO$
	(b) Cation is smaller than the atom		$(c) KivO_3 \qquad (d) ivu_2SO_3$
	(c) Size of cation and atom is the same (d) Cation is greater in size than the atom	16.	A mixture of KCl and KF is added to sodium chloride
5	Valency electrons in alkali metals are [CPMT 1072]		(a) To increase the conductivity of <i>NaCl</i>
J.	(a) 1 (b) 7		(b) To decrease the melting point of $NaCl$
	(c) 4 (d) 2		(c) To supress the degree of dissociation of $NaCl$
6.	Magnitude of which of the following property of alkali metals		(d) To decrease the volatility of $NaCl$
	increases with the increase of atomic number	17.	A well known reagent which contains copper sulphate, sodium
	[MP PMT 1987]		(a) Eenton's reagent (b) Schiff's reagent
	(a) Electronegativity (b) Ionic radius		(c) Fehling's solution (d) Nessler's reagent
7	As compared to lithium sodium reacts quickly with water because	18.	Sodiumproversion state and sta
<i>,</i> .	(a) Its molecular weight is less		[CPMT 1972, 85; BHU 1983]
	(b) It is stronger electronegative		(a) Benzene (b) Kerosene
	(c) It is stronger electropositive		(c) Alcohol (d) Toluene
	(d) It is a metal	19.	The most dangerous method of preparing hydrogen would be by the
8.	Which is an ore of potassium		action of <i>HCl</i> and [JIPMER 2000]
	[DPMT 1984; CPMT 1986; Kurukshetra CEE 1998]		(a) Al (b) K
	(a) Carnellite (b) Cryolite		(c) Fe (d) Zn
	(c) Bauxite (d) Dolomite	20.	Based on lattice energy and other considerations which one of the
9.	Na_2CO_3 can be manufactured by Solvey's process but K_2CO_3		following alkali metal chlorides is expected to have the highest melting point [AIEEE 2005]
	cannot be prepared because [MP PMT 1993]		(a) LiCl (b) NaCl
	(a) K_2CO_3 is more soluble		(c) <i>KCl</i> (d) <i>RbCl</i>
	(b) K_2CO_3 is less soluble	21.	The correct formula of hypo is
	$() KHCO (111 - 1 - N_{\rm e}HCO)$		(a) $Na_2S_2O_3.5H_2O$ (b) Na_2SO_4
	(c) $K\pi CO_3$ is more soluble than $Na\pi CO_3$		(c) $Na_2S_2O_2.4H_2O$ (d) $Na_2S_2O_2.3H_2O$
	(d) $KHCO_3$ is less soluble than $NaHCO_3$	22	The reagent commonly used to determine hardness of water
10.	Which of the following alkali metals is smallest in size [CPMT 1990]		titrimetrically is [AIIMS 2003]
	(a) <i>Rb</i> (b) <i>K</i>		(b) Disodium salt of <i>EDTA</i>
	(c) Na (d) Li		(c) Sodium citrate
11.	When potassium dichromate crystal are heated with conc. HCl	[[DCEd]998]odium thiosulphate
	(a) O_2 is evolved	23.	$K_2 CS_2$ can be called potassium [CPMT 1972. 74]

 $K_2 CS_3$ can be called potassium [CPMT 1972, 74] 23.

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(a) Thiocyanate	(b)	Thiocarbonate		(a)	s-orbitals	(b)	<i>p</i> -orbitals	
(c) Thiocarbide	(d)	Sulphocyanide		(a) (c)	<i>d</i> -orbitals	(d)	<i>F</i> orbitals	
Which is most basic in characte	er (BHU	1982]	38.	The	alkali metal that reacts	with nitros	zen directly to form r	itride is[Roo
(a) <i>RbOH</i>	(b)	КОН	0	(a)	Li	(b)	Na	
(c) NaOH	(d)	LiOH		(c)	K	(d)	Rh	
When washing soda is heated		[AFMC	2005] 39.	Wh	ich of the following has	density gre	ater than water	
(a) CO is released			- 05			denoity gre	[MP	PET 1994]
(b) $CO + CO_2$ is released				(a)	Li	(b)	Na	
(c) CO_{2} is released				(c)	K	(b)	Rh	
(d) Water vanour is released			40.	The	reactivity of the alkali n	netal sodiu	m with water. is mad	e use of
Which of the following is correct	-+ [CDM	T 1071]	•	(a)	In drying of alcohols		·····, · ····	
(a) All carbonates are soluble	in water			(b)	In drying of benzene			
(b) Carbonates of Na K ar	N Water	ara coluble in water		(c)	In drying of ammonia	solution		
(b) Carbonates of Iva, K at		4 are soluble in water		(d)	As a general drying ag	ent		
(c) Carbonates of Ca , Sr ,	Ba are	soluble in water	41.	Wh	ich of the following has	smaller siz	e	
(d) All carbonates are insolubl	e						[R	PET 2003]
Nitre is		[CPMT	1986]	(a)	Н	(b)	He^+	
(a) $AgNO_3$	(b)	KNO ₃			H^2	(J)	Li^{2+}	
(c) NH_4NO_2	(d)	NaNO ₂		(c)	111	(u)	Li	
Nelson cell is used for the pren	aration	of	42.	KF -	combines with HF t	to form K	HF_2 . The compound	contains
the solution can be ased for the prepe		[СРМТ	1985]	the	species			[IIT 1996]
(a) Slaked lime	(b)	Baryta	.5-0]	(a)	$K^+,\ F^-$ and H^+	(b)	$K^+,\ F^-$ and HF	
(c) Sodium	(d)	Caustic soda		(a)	K^+ and $[HF]^+$	(4)	$[KHF]^+$ and F^-	
Potash alum is a		[CPMT 1986; MNF	R 1981]	(C)		. 11		
(a) Complex salt	(b)	Acid salt	43.	Wh	ich alkalı metal is most i	metallic in	character	
(c) Double salt	(d)	Normal salt			14	(1)	[МН	CET 2001]
The process of industrial man	nufactur	ring of sodium carbona	nte is	(a)	ĸ	(b)	Cs	
known as		[CPMT 1978, 86; MP PMT	1995]	(c)	Na	(d)	Li	
(a) Castner process	(b)	Haber's process	44.	The	property of hydrogen	which dist	tinguishes it from ot	her alkali
(c) Le-blanc process	(d)	Chamber process		(a)	Its electronositive char	actor	[/***	1211990]
The colour of hydrogen is	(1)	[IIT] 	1980]	(a) (b)	Its affinity for non-met	tala		
(a) Orange	(d)	None of these		(b) (a)	Its animity for hon-met	Lais		
Which one of the following s	alts oive	es aqueous solution whi	ich is	(d)	Its non metallia abaraa	tor		
weakly basic	ants give	Bihar CEE	1995]			ter		
(a) $NaHCO_2$	(b)	NaHSO 4	- 45.	wn	ich of the following reac	ts with wa	ter with high rate	
$() N_{\pi}C^{\dagger}$	(1)			()			[^	-MC 1995]
(c) Ivaci	(d)	$M_4 H C O_3$		(a)	Li	(b)	Κ	
An example for a double salt is		[KCET	2002]	(c)	Na	(d)	Rb	
(a) Silver nitrate	(b)	Mohr's salt	46.	The	valence shell electronic	configurati	ion of alkali metals is	
(c) Potassium terricyanide	(d)	Cupromonium sulphate	un con				[MP PET 1996; UPS	EAT 2001]
burner due to	nue a co	olour to the flame of Bi [AllMS]	1987]	(a)	ns^2np^1	(b)	ns ¹	
(a) Low ionization potential		[·	- · ·	$\langle \rangle$	$(n - 1)n^6 n c^2$	(1)	$(n \ 1)d^2ms^2$	
(b) Low melting point				(c)	(n-1)p ns	(d)	(n-1)a ns	
(c) Softness			47.	Alka	ali metals are		[MP]	PMT 1996]
(d) Presence of one electron in	1 the ou	termost orbit		(a)	Li, Na, Be, Mg, Cs	(b)	Li, Na, K, Rb, Cs	
Which of the following is the sr	nallest c	ation		(c)	Na, K, Mg, Ca, Rb	(d)	K, Rb, Cs, Ba, Sr	
		[MP PMT	1993] 48.	The	atomic number of an el	lement is 11	. Its oxide will be	
(a) Na^+	(b)	Mg^{+2}					[MP]	PMT 1996]
() C_{r}^{+2}	(1)	A 1+3		(a)	Acidic	(b)	Basic	
(c) Ca^{-1}	(d)	Al		(c)	Acid and basic both	(d)	Neutral	
K, Ca and Li metals may	be arra	nged in the decreasing	order 49 .	The	commercial production	of sodium	carbonate is done by	
of their standard electrode pote	ntials as	s [CPMT	1990]				[CPMT 1982; MP]	PMT 1996]
(a) <i>K</i> , <i>Ca</i> , <i>Li</i>	(b)	Li, K, Ca		(a)	Lead-chamber process			
(c) Li, Ca, K	(d)	Ca, Li, K		(b)	Haber's process			
		CODOR DUM		(c)	Salvav'a process			

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						_				Carlos
	(d)	Castner's process			62.	Wh	en sodium dicarbonate is he	ated st	rongly for calci	ned in a kiln, it
0.	Alka	ali metals are strong reducin	g beca	use			lis N			.ET (Med.) 2000]
	(a)	These are monovalent				(a)	Na	(b)	Na_2CO_3	
	(b)	Their ionisation potential a	are ver	y high		(c)	NaCO ₃	(d)	NaHCO ₃	
	(c)	Their standard electrode p	otentia	al are very much negative	63.	The	strongest reducing agent is			[MP PET 2001]
	(d)	These are metals				(a)	K	(b)	Al	
	Whi	ich of the following statemer	nt abo	ut <i>LiCl</i> and <i>NaCl</i> is correct[Ku	rukshetra	CEÉc30	0 2]1g	(d)	Br	
	(a) LiCl has higher melting point than NaCl			64.	The	word 'alkali' is used for alka	ili meta	als indicates		
	(b) LiCl dissolves in water whereas NaCl does not								[RPMT 1999]	
	(c)	LiCl would ionize in water	more	than NaCl		(a)	Ash of the plants	(b)	Metallic nature	e
	(d)	Fused <i>LiCl</i> would be less c	onduc	ting than fused NaCl	6-	(c)	Silvery lusture	(d)	Active metal	
•	ln ti mad	he Castner's process for th	e extra	action of sodium, the anode is	65.	Pota (a)	Mohr's salt	(b)	Gypsum	[RPMT 1999]
	(a)	Common	(b)	lanan		(c)	Indian salt petre	(d)	Chile salt petro	e
	(a)	copper	(D)		66.	Wh	ich of the following chemica	ıls, in a	addition to wate	er, are used for
	(c)	Sodium	(d)	NICKE		the	manufacture of Na_2CO_3	by Solv	ay process	
	Whi	ich of the following <i>s</i> -block	eleme	nts forms nitride						[Roorkee 1999]
				[RPET 2003]		(a)	$NaCl, CO$ and NH_3			
	(a)	Ва	(b)	Ве		(b)	NaCl.CO2 and NH2			
	(c)	Ca	(d)	Li		(-)				
•	Tinc	cal is		[Pb. PMT 2001]		(c)	$NaCl, NH_4Cl$ and CO	2		
	(a)	$Na_2CO_3.10H_2O$	(b)	NaNO ₃		(d)	NaHCO ₃ ,CO and NH	3		
	(c)	NaCl	(d)	$Na_2B_4O_7.10H_2O$	67.	Wh	ich metal forms amide with	NH_3	at 300° C	
	Whi	ich has minimum solubility		[BHU 2003]						[CPMT 1994]
	(a)	Br_2S_3	(b)	Ag_2S		(a)	Mg	(b)	Pb	
	(c)	CoS	(d)	PbS		(c)	Al	(d)	Na	
	Сгус	olite helps in	. /	[BHU 2003]	68.	Wh	en sodium is heated with mo	oist air	, then the produ	ict obtained is [A
	(a)	Lowering the melting point	t			(a)	Na_2O	(b)	NaOH	
	(b)	Increasing the melting poir	nt				Na CO	(1)	Na O	
	(c)	Increasing the electrical co	nducti	vity		(c)	$Iva_2 CO_3$	(d)	Na_2O_2	
	(d)	Decreasing the electrical co	onduct	ivity	69.	An 1:1	inorganic compound first	melt	s then resolidi	fies and then
	ln c reas	ertain matters lithium differ on for this is	rs fror	n other alkali metals, the main [MP PET/PMT 1998]		nbe (a)	rates a gas. It may be MnO_2	(b)	Al_2O_2	[UPM1 2002]
	(a)	Small size of <i>Li</i> atom and	Li^+ io	n		~ /	- KM 0	(-)	2 3 KClO	
	(b)	Extremely high electroposit	tivitv c	of <i>Li</i>		(c)	кмnO ₄	(d)	KClO ₃	
	(c)	Greater hardness of <i>Li</i>	, , ,		70.	On	dissolving moderate amount	t of so	dium metal in li	iquid NH_3 at
	(L)	Hydration of Li ⁺ :				low	temperature, which one of t	the foll	owing does not	occur[AllMS 2003
	(u) Acid	lified potassium permangan	ate col	ution is decolourised by	ſı	(a)	Blue coloured solution is o	btained	1	
•	(a)	Bleaching powder	(h)	Microcosmic salt	Ľ	(b)	Na^+ ions are formed in t	he solu	ution	
	(c)	Mohr salt	(d)	White vitriol		(c)	Liquid NH - becomes good	nd con	ductor of electri	city
	Whi	ich one of the following	is use	d as a disinfectant in water		(-)	11			
	treat	tment		[NDA 1999]	_	(d)	Liquid ammonia remains d	iamagi	netic	
	(a)	Alum	(b)	Charcoal	71.	The	solubility of the alkali meta	carbo	nates	
	(c)	Kieselguhr	(d)	Potassium permanganate		()	1 1.1	1		[rune CET 1998]
	Sodi	ium thiosulphate is used in p	photog	graphy _		(a)	increases at first and then	decrea	ses	
	()	m . 111		[UPSEAT 1999]		(b)	Does not show regular var	ation		
	(a)	To convert metallic silver i	nto sil	ver salt		(c)	Increases as we go down the	ne grou	цр	
	(b)	AgBr grain is reduced to n	on-me	tallic silver		(d)	Decreases as we go down t	he gro	oup	
	(c) (J)	To remove reduced silver	Josef L	AgBr in the form -f	72.	Wh	ich of the following properti	es is n	ot true for an al	kali metal [Pune C
	(a)	$Na_{1}[Ao[S_{1}O]] = 1$ (2 corr	used	<i>موه</i> in the form of alt		(a)	Low atomic volume			
	C		ipiex s	(1)		(b)	Low ionization energy			
	Con	nposition of borax is	19 .	[UPSEAT 2001;04]		(c)	Low density			
	(a)	$Na_2B_4O_7.4H_2O$	(b)	$Na_2B_4O_7.10H_2O$		(d)	Low electronegativity			
	(c)	NaBO ₂	(d)	Na_2BO_3						

758 s and p-Block Elements Which of the following alkali metals has the biggest tendency for the 73. (d) Na^+ Li^+ (c) half reaction, $M(g) \rightarrow M^+(aq) + e^-$ [DPMT 2001] Lithium shows similarities to magnesium in its chemical behaviour 85. because [Pb. PMT 2000] (a) Lithium (b) Sodium Similar size, greater electronegativity and similar polarizing (a) (d) Potassium Cesium (c) power. Which one of the following metalic hydroxides does not dissolve in 74. Similar size same electronegativity and lower polarizing power (b)sodium hydroxide solution [KCET (Med.) 2001] Similar size, same electronegativity and similar high polarizing (c)(a) $Zn(OH)_2$ (b) $Al(OH)_3$ power None of these (d) (c) $Fe(OH)_3$ (d) $Pb(OH)_2$ 86. Which one of the following is the most electropositive element [Pb. PMT 2000] 75. Which one of the following on heating will not give CO_2 (a) Calcium (b) Chlorine Potassium (d) Carbon (c) [NDA 1999; BHU 2000] 87. Electrolysis of molten sodium chloride leads to the formation of [KCET 1990] $CaCO_3$ (b) Na_2CO_3 (a) Na and H_2 (b) Na and O_2 (a) (c) $PbCO_3$ (d) Li_2CO_3 (c) H_2 and O_2 (d) Na and Cl_2 76. NaOH is prepared by the method [AFMC 2005] 88 When sodium bicarbonate is heated the product obtained is (a) Down's cell (b) Castner cell [Pb. CET 2000; DCE 2004] (d) Castner Kellner cell (c) Solvay process (a) *Na* (b) Na_2CO_3 77. Sodium gives blue colour with NH_3 solution, this blue colour is (d) $Na_2(HCO_3)$ (c) $NaCO_3$ due to Which of the following is a use of alum [UPSEAT 2000,02; AMU 2002; RPMT 2002] [CPMT 2004] 89. (a) Making explosives (b) Bleaching clothes (a) Ammoniated Na^{\oplus} (b) Ammoniated Na^{Θ} (c) Water softening (d) All of the above (d) Na^+ / Na^- pair (c) Ammoniated e Which of the following salt does not get hydrolysed in water 90. The strongest reducing agent of the alkali metal is 78. [CPMT 2004] [CPMT 1999; Pb.CET 2001] (a) $KClO_4$ (b) $NH_{4}Cl$ (a) *Li* (b) Na (c) K (d) Cs (c) CH_3COONa (d) None of these With the increase in atomic weights, melting points of the alkali 79. A fire of lithium, sodium and potassium can be extinguished by [DCE 2003] 91. [MP PMT 1995] metals (a) H_2O (b) Nitrogen (a) Increase (b) Decrease (c) CO_2 (d) Asbestos blanket (c) Remain constant Which of the following metal has stable carbonates 92. (d) Do not show definite trend [AFMC 2004] The reaction of water with sodium and potassium is 80. (a) *Na* (b) *Mg* [BHU 1999] (c) Al (d) Si (a) Exothermic Aluminium reacts with caustic soda to form [DCE 2004] 93. (b) Endothermic (a) Aluminium hydroxide Reversible (c) (b) Aluminium oxide Irreversible and endothermic (d) Sodium meta-aluminate When potassium ferrocyanide crystals are heated with concentrated (c) 81. sulphuric acid, the gas evolved is (d) Sodium tetra aluminate [CBSE PMT PMT 1999; KCET 2000] 94. Alkaline earth metals are denser than alkali metals, because metallic (a) Ammonia (b) Sulphur dioxide bonding in alkaline earth's metal, is [BHU 2004] Carbon dioxide (d) Carbon monoxide (c) (a) Stronger (b) Weaker Characteristic feature of alkali metals is 82. (c) Volatile (d) Not present [RPMT 2000; MP PMT 2004] Which of the following is a false statement [CPMT 2004] 95 (a) Good conductor of heat and electricity (a) Fluorine is more electronegative than chlorine (b) High melting points (b) Nitrogen has greater IE_1 than oxygen (c) Low oxidation potentials (c) Lithium is amphoteric (d) High ionization potentials Chlorine is an oxidising agent (d) A substance X is a compound of an element of group IA the 83. substance X gives a violet colour in flame test, X is 96. Which is most basic in character [UPSEAT 2004] [MP PMT 1980, 85, 86; CPMT 1985; DCE 2000] **CsOH** (a) (b) *KOH* (a) LiCl NaCl (b) (c) NaOH (d) LiOH KCl (d) None (c) Photoelectric effect is maximum in [AFMC 2004] 97. Which of the following alkali metal ions has lowest ionic mobility in 84 (a) Cs (b) Na aqueous solution [KCET 2000] (c) K (d) Li

(a) Rb^+ (b) Cs^+

(d) Existence of body centred cubic lattice 98. A metal *M* reacts with N_2 to give a compound '*A*' (M_3N). '*A*' on 110. The metal which reacts with water at room temperature is heating at high temperature gives back 'M and 'A' on reacting with [CPMT 1985; MP PMT 1996; MP PET 1998] H_2O gives a gas 'B. 'B turns $CuSO_4$ solution blue on passing (a) Copper (b) Iron through it. A and B can be [DCE 2003] (c) Magnesium (d) Sodium (a) Al and NH_3 (b) Li and NH_3 111. When NaCl is dissolved in water, the sodium ion is (d) Mg and NH_3 (c) Na and NH_3 [CPMT 1989] 99. A solid compound 'X on heating gives CO_2 gas and a residue. The (a) Oxidised (b) Reduced residue mixed with water forms 'Y. On passing an excess of (c) Hydrolysed (d) Hydrated CO_2 through 'Y in water, a clear solution, 'Z is obtained. On 112. Sodium metal cannot be stored under boiling 'Z, compound 'X is reformed. The compound 'X is [CBSE PMT 2004] [CPMT 1985, 88, 94] (a) Na_2CO_3 (b) K_2CO_3 (a) Benzene (b) Kerosene (c) Alcohol (d) Toluene (c) $Ca(HCO_3)_2$ (d) $CaCO_{2}$ Causticization process is used for the preparation of 113. mongst LiCl, RbCl, BeCl₂ and MgCl₂ the compounds with the 100. [CPMT 1985; BHU 1986] greatest and least ionic character respectively are (a) Caustic soda (b) Caustic potash [Pb. CET 2004] (d) Slaked lime (c) Baryta (a) LiCl and RbCl (b) $MgCl_2$ and $BeCl_2$ When CO is passed over solid NaOH heated to $200^{\circ}C$, it 114. RbCl and BeCl₂ (d) RbCl and MgCl₂ (c) forms [MP PMT 1985] Salt cake is 101. (b) $NaHCO_3$ (a) Na_2CO_3 (a) Sodium sulphate (c) HCOONa (b) Sodium chloride (d) None (c) Sodium bisulphite NaOH is manufactured by electrolysis of brine solution. The 115. (d) Sodium sulphate and Sodium chloride products of the reaction are [KCET 1990] 102. Globar salt is [BHU 1983; CPMT 1988, 91; (b) Cl_2 and Na - Hg(a) Cl_2 and H_2 IIT 1985; MP PET 2000] (c) Cl_2 and Na(d) Cl_2 and O_2 (a) $MgSO_4.7H_2O$ (b) $CuSO_4.5H_2O$ Sodium carbonate is manufactured by Solvay process, the products 116. (c) $FeSO_4.7H_2O$ (d) $Na_2SO_4.10H_2O$ that are recycled are [KCET 1993; DCE 1999] The colour given to the flame by sodium salts is 103. (a) CO_2 and NH_3 (b) CO_2 and NH_4Cl [CPMT 1980; MP PET 1986] (a) Light red (b) Golden yellow (c) NaCl, CaO (d) $CaCl_2, CaO$ (c) Green (d) Pink The useful bye-products, obtained in the Solvay process of 117. Solvay's process is used for the preparation of 104. manufacturing sodium carbonate, are [KCET 1989, 93] [CPMT 1982; AllMS 1987] (a) Quick lime and CO_2 (b) Sodium bicarbonate (a) Ammonia (c) Sodium carbonate (d) Calcium carbonate (b) $NaHCO_3$ and NH_4Cl Sodium when heated in a current of dry ammonia gives 105 NH_4Cl solution and quick lime (c) [NCERT 1981; KCET 2000] (b) Sodium hydride (a) Sodium nitrite (d) $NaHCO_3$ and CO_2 (c) Sodium amide (d) Sodium azide 118. In the preparation of sodium carbonate, which of the following is 106. Washing soda is used [AFMC 1992] [CPMT 1982; DPMT 1982; CBSE PMT 1990; (a) Slaked lime (b) Quick lime MP PMT 1987, 96] (c) Lime stone (d) NaOH (a) $Na_2CO_3.10H_2O$ (b) $Na_2CO_3.H_2O$ When NaOH crystals are left in open air, they acquire a fluid 119. (c) $Na_2CO_3.5H_2O$ (d) Na_2CO_3 [CPMT 1974] layer around each crystal as The substance used to decolourise and purify oils is 107. (a) They start melting [MP PMT 1987] They absorb moisture from air (b) (a) Sodium carbonate (b) Sodium chloride They react with air to form a liquid compound (c) (c) Sodium hydroxide (d) Sodium sulphate They absorb CO_2 from air (d) 108. The main salt soluble in sea water is [MP PMT 1998] (a) $MgCl_2$ (b) NaCl Sodium carbonate reacts with SO_2 in aqueous medium to give 120. [MP PMT 1982, 85] $MgSO_4$ (d) $CaSO_4$ (c) (a) $NaHSO_3$ (b) Na_2SO_3 The metallic lustre exhibited by sodium is explained by 109. [IIT 1987] (c) $NaHSO_4$ (d) Na_2SO_4 Diffusion of sodium ions (a) Baking soda is 121. [CPMT 1974, 78, 79, 91; Oscillation of loose electrons (b)

Excitation of free protons

(c)

BHU 1979; Manipal MEE 1995; AIIMS 1996;

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UNIV SELF S	ERSAL SCORER 760 s and p-Blo	ock Elements					
	 CPMT 1973	3; RPET 1999; AFMC 2001, 0;	5; Pb. CET 2002]		(d) Absorbed high radiation		
	(a) Na_2CO_3	(b) NaHCO ₃		132.	Sn is dissolved in excess of	f Na	OH solution, the compound
	(c) Na_2SO_4	(d) $K_2 CO_3$			obtained is $S_{\mu}(OH)$	(b)	[RPMT 1997] Na SnO
122.	Soda ash is		[KCET 1993]		(a) $Sn(OH)_2$	(D)	$Nu_2 SnO_3$
	(a) $Na_2CO_3.H_2O$	(b) NaOH			(c) Na_2SnO_2	(d)	SnO_2
	(c) Na_2CO_2	(d) $NaHCO_2$		133.	(a) Elemental sodium can be	prepar	[CPMT 1997] ed and isolated by electrolysing
123.	Soda lime is	(1)	[KCET 1993]		an aqueous solution of so	lium cl	hloride
0.	(a) $NaOH$	(b) CaO	[(b) Elemental sodium is a structure of the structure of t	ong oxi	dizing agent
	(c) $NaOH$ and CaO	(d) Na_2CO_2			(c) Elemental sodium is insolu (d) Elemental sodium is easily	ible in oxidiz	ammonia ed
124.	Molten sodium is used in nu	clear reactors to	[KCET 1080]	134.	Calcium is obtained by	OXIGIZ	[CBSE PMT 1997]
12- 7 -	(a) Absorb neutrons in ord	er to control the chain rea	action		(a) Roasting of limestone		
	(b) Slow down the fast neu	trons			(b) Electrolysis of solution of	calcium	n chloride in H_2O
	(c) Absorb the heat genera	ted by nuclear fission			(c) Reduction of calcium chlo	ride wi	th carbon
	(d) Extract radio-isotopes p	roduced in the reactor			(d) Electrolysis of molten anh	ydrous	calcium chloride
125.	Squashes are stored by addir	ıg	[AFMC 1989]	135.	liberated at the cathode is	on is	electrolysed, the gas that is [Kurukshetra CEE 1998]
	(a) Citric acid	(b) <i>KCl</i>			(a) Oxygen	(b)	Hydrogen
	(c) Na_2SO_3	(d) Sodium metab	isulphite	_	(c) Chlorine	(d)	Air
126.	Sodium thiosulphate (Na_2)	$S_2O_3.5H_2O$) is used in	n photography	136.	During the electrolysis of fusec is [KCET 1998]	sodiu	m chloride, the anodic reaction
	to [CPMT 1972, 74, 79;				(a) Reduction of sodium ions		
	(2) Beduce silver bromide t	DPMT 1983; Bihar CEE 1	995; MNR 1995]		(b) Oxidation of sodium ions		
	(a) Reduce silver bronnde ((b) Convert metallic silver t	to silver salt			(c) Reduction of chloride ions		
	(c) Remove undecomposed	AgBras a soluble silve	er thiosulphate	137.	Which of the following does n	ot par	ticipate in the Solvey's process
	complex				for the manufacture of Na_2C	O_3	[EAMCET 1998]
	(d) Remove unreduced silve	er			(a) NH_3	(b)	NaCl solution
127.	Which of the following pair of	can't exist in solution			(c) CO_2	(d)	H_2SO_4
	$()$ $N_{\alpha}UCO = 1 N_{\alpha}O$		1986; DCE 1999]	138.	The colour of the precipitate p	roduce	d by adding <i>NaOH</i> solution
	(a) $Nanco_3$ and Nao_3	$(b) Na_2 CO_3$ and	Νάθη	•	to $HgCl_2$ is		[KCET 1998]
	(c) Na_2CO_3 and $NaCl$	(d) $NaHCO_3$ and	d NaCl		(a) Yellow	(b)	Black
128.	Sodium thiosulphate is prepa	ared by	[IIT 1996]		(c) Brown	(d)	White
	(a) Reducing Na_2SO_4 so	lution with H_2S		139.	The cell used for the electrolysi	s of fu	sed <i>NaCl</i> is
	(b) Boiling Na_2SO_3 solution	tion with S in alkaline m	edium		(a) Down's cell	(b)	[AFMC 1999; Kerala (Mea.) 2002] Castner cell
	(c) Neutralising $H_2 S_2 O_3$	solution with NaOH			(c) Solvay cell	(d)	Nelson cell
	(d) Boiling Na_2SO_2 solut	tion with S in acidic me	łium	140.	Slaked lime $[Ca(OH)_2]$ is use	d in th	e manufacture
100		.1 1 1.					[UPSEAT 2000]
129.	when $IvaOH$ is prepared,	the gas released is	[CPM1 1996]		(a) Cement	(b)	Fire bricks
	(a) Cl_2	(b) H_2		141	(c) Pigment The alum used for purifying w	(d)	Medicine
	(c) O_2	(d) H_2O		141.	(a) Ferric alum	(b)	Chrome alum
130.	What is lye		[BHU 1997]		(c) Potash alum	(d)	Ammonium alum
	(a) 10% solution of <i>NaCl</i>			142.	Which one of the following m	etalic h	ydroxides does not dissolve in
	(b) 10% solution of <i>KOH</i>				solution solution $Z_{n}(OH)$	(b)	[KCET (Med.) 2001] $A1(OH)$
	(c) 10% solution of $Ca(OI)$	$(H)_2$			(a) $\Sigma n(OH)_2$	(0)	$RI(OII)_3$
	(d) 10% solution of Na_2C	<i>O</i> ₃			(c) $Fe(OH)_3$	(d)	$FO(OH)_2$
131.	Na imparts yellow colour t	o Bunsen flame because o	f	143.	in which of the following pre-	rocesse	s, rused sodium hydroxide is
			[RPMT 1997]		(a) Castner's process	(b)	Down's process
	(a) Low ionisation potentia	I			(c) Cyanide process	(d)	Both (b) and (c)
	(c) Sublimation			144.	Excess of Na^+ ions in our syst	em cau	ises
	()						

s and p-Block Elements 761 SELF SCO [KCET (Med.) 2001] Setting of plaster of paris is [MP PMT 1985; CPMT 1989] 7. (b) Low B.P. (a) High B.P. Oxidation with atmospheric oxygen (a) (c) Diabetes (d) Anaemia Combination with atmospheric CO_2 (b) Ferric alum has the composition $(NH_4)_2 SO_4 \cdot Fe_2(SO_4)_3 \cdot xH_2 O$ [Orissa JEE 2002] 145. Dehydration Hydration to yield another hydrate (d) (b) 24 (a) 7 8. To prevent magnesium from oxidation in electrolytic extraction (d) (c) 6 15 process 146. If Na is heated in presence of air, it forms [AFMC 2002] Some calcium fluoride is added (a) (a) Na_2CO_3 (b) Na_2O_2 (b) Some chlorides are added Metal is taken out by spoons (c)(c) Na_2O (d) Both (b) and (c) The whole process is done in an atmosphere of coal gas (d) Which of the following is most reducing agent 147. [RPMT 2002] Which of the following metal is found in green colouring pigment 9 (a) HNO_3 Na (b) chlorophyll of plants [KCET 1993; RPMT 1999; MP PET 2002] Cr (c) Cl_2 (d) (a) *Fe* (b) *Mg* Pyrolusite is 148. [DPMT 2002] (c) *Na* (d) Al(b) Sulphur ore (a) Carbonate ore (c) Silicon ore 10. Which of the following metal carbonate is decomposed on heating [MNR 1985; / (d) None of these In the manufacture of metallic sodium by the fused salt electrolysis 149. In the manufacture of metallic sodium by the fused salt electrolysis (a) $MgCO_3$ (Down's process) a small amount of calcium chloride is added to[MP PET 1993; MP PMT 1994] (b) Na_2CO_3 (c) $K_2 CO_3$ (d) Rb_2CO_3 (a) Improve the electrical conduction (b) Increase the temperature of electrolysis The outer electronic configuration of alkaline earth metal is 11. (c) Bring down the melt temperature [BHU 1980; CPMT 1985, 93; MP PAT 1993] (d) Stabilize the metallic sodium (a) ns^2 (b) ns^1 150. Sodium metal is extracted by [MP PMT 1996] nd^{10} (a) Electrolysis of aqueous solution of sodium chloride (c) np^6 (d) (b) Electrolysis of fused sodium chloride 12. Metallic magnesium is prepared by [BHU 1973, 77] (c) Heating sodium oxide with carbon (a) Reduction of MgO by coke (d) Heating sodium oxide with hydrogen Electrolysis of aqueous solution of $Mg(NO_3)$ (b) Alkaline earth metals Displacement of Mg by iron from $MgSO_4$ solution (c) (d) Electrolysis of molten $MgCl_2$ To remove last traces of water from alcohol, the metal used is 1. Of the metals Be, Mg, Ca and Sr of group II A. In the (a) Sodium (b) Potassium 13. periodic table the least ionic chloride would be formed by (c) Calcium (d) Aluminium [NCERT 1980; CPMT 1980] Plaster of Paris is 2. (a) *Be* [CPMT 1972, 76, 78, 83, 87, 88, 90, 91, 93, 94;]IPMER 2002; (b) Mg MP PET 1986, 2001; BHU 1992, 95, 2000; MNR 1982; DCE 2000; Ca (d) Sr (c) Manipal MEE 1995; NCERT 1976; Bihar MEE 1997; EAMCET 1978; Which one of the following is fluorspar 14. AMU 1982, 84; DPMT 1982, 83] (a) CaF_2 (b) CaO $CaSO_4.2H_2O$ (b) $CaSO_4.3H_2O$ (a) (c) $H_2 F_2$ CaCO₃ (c) $CaSO_4.H_2O$ (d) $CaSO_4.\frac{1}{2}H_2O$ (d) Which one is known as barytes [CPMT 1987] 15. Which of the following substance is used as dehydrating agent in 3 (a) $BaSO_4$ (b) $BaCl_2.2H_2O$ laboratory [MP PMT 1987] BaO (d) $BaCO_3$ (a) Calcium chloride (b) Sodium chloride (c) (c) Sodium carbonate (d) Potassium nitrate Which of the following sulphates have the highest solubility in water[EAMCET I 16. The metal that is extracted from sea water is 4. Kurukshetra CEE 1998; AFMC 1990; MP PET 1994] [EAMCET 1978; CPMT 1988; CET Pune 1998; (a) $MgSO_4$ (b) $BaSO_A$ MP PET 2000] (a) Ba (b) *Mg* (c) $CaSO_4$ (d) BeSO₄ Ca (d) Sr (c) (c) *Ca* (d) *Sr* **17.** The composition formulae of gypsum is Which of the following ore contains both magnesium and calcium [MDAT Bihar 1984; MP PET 2003] 5. [CPMT 1975, 78, 82; DPMT 1982; IIT 1978; (a) Magnesite (b) Dolomite MNR 1981; MP PMT 1996; RPMT 1997] (c) Carnellite (d) Phosphorite (a) $(CaSO_4)_2 . H_2 O$ $2CaSO_{A}$ (b) Epsom salt is 6. [EAMCET 1978, 80; BHU 1979; MP PET 1999; (c) $CaSO_4.2H_2O$ (d) $2CaSO_{4}.H_{2}O$ CPMT 1988, 89, 90; Bihar MEE 1996] Mortar is a mixture of [EAMCET 1998; AIIMS 2000] 18. $CaSO_4.2H_2O$ (b) $BaSO_4.2H_2O$ (a) (a) $CaCO_3$, sand and water $MgSO_4.2H_2O$ (d) $MgSO_4.7H_2O$ (c) (b) Slaked lime and water

	(c) Slaked lime, sand and water	20	Mixture of Macl and Mac) is call	
	(d) $CaCO_3$ and CaO	30.	(a) Double salt	(h)	Sorrel cement
			(c) Portland cement	(d)	None of these
•	Gypsum $CaSO_4.2H_2O$ on heating to about $120^{\circ}C$ forms a compound which has the chemical composition represented by[CPMT 19	3]. 178, 82, 8	Lithopone is 8, 90; EAMCET 1978;		[AFMC 1992; BHU 1983, 86, 95; 11PMER 1999: RPET/PMT 1999]
	DPMT 1982, 83; NCERT 1979]		(a) $BaO + ZnSO_4$	(b)	$ZnO + BaSO_4$
	(a) $CaSO_4$ (b) $2CaSO_4.H_2O$		(c) $BaS + ZnSO$.	(d)	$\overline{ZnS} + BaSO$
	(c) $CaSO_4.H_2O$ (d) $2CaSO_4.3H_2O$	32	For bleaching powder, which is	incorre	ect
).	The highly efficient method of obtaining beryllium is	.20	for bleaching powder, which is	meent	[EAMCET 1984; CPMT 1985]
	[NCERT 1982]		(a) Reacts with dilute acid to	release	chlorine
	(a) Dissociation of beryllium carbide (b) Electrolycic of fueed herallium ableride		(b) Oxidising agent		
	(c) Beduction of hervllium oxide with carbon		(c) Light yellow coloured pow	/der	
	(d) Reduction of beryllium halide with magnesium	33	(d) Highly soluble in water Bleaching powder is a compound	l having	the molecular formula
•	Mark the incorrect statement		[CPMT 19	986, 89,	90, 93; MP PMT 1996; BHU 2005]
	(a) Lithopone is cheap and possess good covering power		(a) $CaOCl_3$	(b)	CaOCl ₂
	(b) Lithopone is yellow pigment		(c) $CaClO$	(d)	$CaClO_2$
	(c) Lithopone is prepared by mixing barium sulphide and zinc	34.	Calcium cynamide is	(-)	[CPMT 1986, 93]
	sulphate	04.	(a) $CaCHNH_{2}$	(b)	CaCN 2
_	(d) Litnopone is a mixture of barium supprate and zinc suppride		(a) = cac N	(d)	$C_{a}(CN)$
2.	Pure anhydrous $MgCl_2$ can be prepared from the hydrated salt by [CP	MT 1986	; MP PMT 1989] ¹ 2	(u)	
	(a) Heating the hydrate with coke	35.	which one of the following is a	i true p	eroxiae T 1999: CPMT 1981: Roorkee 1995]
	(b) Heating the hydrate with Mg ribbon		(a) SO_2	(b)	BaO_2
	(c) Melting the hydrate		(c) MnO	(d)	NO
	(d) Heating the hydrate to red heat in an atmosphere of HCl gas	26	Which of the following is no	(u) t a wa	tor absorber and dehudrating
3.	Bleaching powder is obtained by the interaction of chlorine and [CPMT 19	972, 78, 8	39; 2002; DPMT 1983] substance	ldWd	[CBSE 1989; JIPMER 2002]
	(a) Conc. solution of $Ca(OH)_2$		(a) Silica gel	(b)	P_2O_5
	(b) Dilute solution of $Ca(OH)_2$		(c) Conc. H_2SO_4	(d)	Aqueous CaCl
	(c) Dry calcium oxide	37.	The dark red colour of bombs	in firew	orks is due to the presence of
	(d) Dry slaked lime	07.		MP PM	[1985; AFMC 1989; Roorkee 1989]
1.	Deep pink colour is given to flame by the salts of (a) Strantium (b) Petageium		(a) <i>Na</i>	(b)	Ba
	(c) Zinc (d) Barium		(c) <i>Sr</i>	(d)	Κ
5.	Calcium salts give which colour when put in a flame	38.	The most electropositive amon	gst the	alkaline earth metals is
	(a) Brick red (b) Green		(-) D 11:	(L)	[MP PMT 1993]
	(c) White (d) Pink		(a) Beryllium	(d)	Magnesium
5.	Phosphine is obtained from the following ore	39.	Which of the following sal	ts is i	insoluble in water at room
	(a) Calcium superphosphite (b) Calcium phosphide		temperature but soluble in boil	ing wat	er [MP PMT 1993]
	(c) Potassium phosphide (d) Calcium hypophosphide		(a) $CaCl_2$	(b)	$BaCl_2$
1.	Calcium is obtained by		(c) $SrCl_2$	(d)	$PbCl_2$
	[DPMT 1980; IIT 1980; CPMT 1996;AIIMS 2001]	40.	Electronegativity of beryllium is a	pproxin	nately equal to that of
	(a) Roasting of time stone (b) Reduction of $CaCl$ with each or				[MP PMT 1993]
	(b) Reduction of $CaCt_2$ with carbon		(a) Aluminium	(b)	Boron
	(c) Electrolysis of a solution of $CaCl_2$ in water	A1	(c) Magnesium	(d) Vofori	soaium nhates of alkaling earth metals
	(d) Electrolysis of molten $CaCl_2$	41.	in water is	y or su	phates of alkaline earth metals
3.	Which element possesses biggest atomic radii		[MP PET	1993; Pb. CET 2000; DPMT 2004]
	(a) <i>P</i> (b) <i>Si</i>		(a) $Be > Ca > Mg > Ba >$	Sr	
	(c) Al (d) Mg		(b) $Mg > Be > Ba > Ca >$	Sr	
9.	Magnesia is		(c) $Be > Mg > Ca > Sr >$	Ba	
	(a) $MgCO_3$ (b) MgO		(d) Ma > Ca > Ba > Ba > Ba > Ba > Ba > Ba > B	Sr	
	() $M_{\alpha}CQ$ (1) $M_{\alpha}Cl$		(u) $Mg > Cu > Du > De >$	57	

				s and p-	Block Elements	VNIVERSAL SELF SCORER
42.	Which of the following has hi	ighest electrode potential		(c) $H_2 SO_4$	(d) <i>ZnO</i>	
		[CPMT 199	^{0]} 54.	Setting of cement is an		[DPMT 1984]
	(a) Be	(b) <i>Mg</i>		(a) Exothermic reaction		
	(c) <i>Ca</i>	(d) <i>Ba</i>		(b) Endothermic reactio	n	
43.	The alkaline earth metals	Ba, Sr, Ca and Mg may b	be	(c) Neither exothermic	nor endothermic	
	arranged in the order of their	decreasing first ionisation potential a	s	(d) None of these [CPMT_1990]		
	(a) Mg, Ca, Sr, Ba,	(b) Ca , Sr , Ba , Mg	55.	which is quick time $(\cdot) = C_{\pi}(OU)$	(1) $C_{\alpha}O$	[EAMCET 1993]
	(c) Sr. Ba. Mg. Ca	(d) Ba , Mg , Ca , Sr ,		(a) $Cu(OH)_2$	(b) <i>CuO</i>	
44.	Which of the following alkali	ne earth metals shows some propertie	25	(c) $CaCO_3$	(d) $Ca(OH)_2$	$+H_2O$
	similar to aluminium	[BHU 198	3] 56.	A major constituent of po	ortland cement except lim	ie is
	(a) Be	(b) <i>Ca</i>		(a) Silica	(b) Alumina	[CPMT 1982]
	(c) Sr	(d) <i>Ba</i>		(c) Iron oxide	(d) Magnesia	
45.	Which of the following ions f	orms highly soluble hydroxide in water	-[CPMT 59 74	, 76, 99, 82 cement is manu	factured by using	[CPMT 1986]
	(a) K^+	(b) Zn^{++}		(a) Lime stone, clay and	sand	
	$(-)$ $A l^{+++}$	(1) Ca^{++}		(b) Lime stone, gypsum	and sand	
46	(c) Al Sodium subbata is soluble	(d) Ca	ia	(c) Lime stone, gypsum	and alumina	
40.	sparingly soluble because	[IITJEE 1989]	58	(d) Lime stone, clay and Identify the correct state	ngypsum	[CRSF PMT 1005]
	(a) The hydration energy	of Na_2SO_4 is less than its lattice	се Се	(a) Gypsum contains a plaster of paris	lower percentage of plast	er of calcium than
	(b) The hydration energy	of Na_2SO_4 is more than its lattic	re.	(b) Gypsum is obtained	by heating plaster of par	is
	energy			(c) Plaster of paris can	be obtained by hydration	of gypsum
	(c) The lattice energy of	$BaSO_4$ is more than its hydratic	m	(d) Plaster of paris is ob	otained by partial oxidatio	n of gypsum
	energy	7	59.	Which of the following	decreases on going grad	ally from <i>Be</i> to
	(d) The lattice energy has n	o role to play in solubility		Ba (in periodic table)	udnavidaa	
47.	Which one of the following is	s most basic [CPMT 1977, 8	3]	(a) Basic character of hy	es in water	
	(a) Al_2O_3	(b) MgO		(c) Solubility of hydroxi	des in water	
	(c) SiO_2	(d) P_2O_5		(d) Strength of elements	s as reducing agent	
48.	Alloys of metal are ligh	it and strong and so are used in th	ne 60.	Alkaline earth metals are		[MP PMT 1996]
	manufacture of aeroplane par	ts [EAMCET 1978]		(a) Li, Be, K, Mg, Ca	(b) Be, Mg, Ca	, Sr, Ba
	(a) Cr	(b) <i>Sn</i>	61	(c) <i>Be, K, Mg, Ca, Sr</i> Which of the following s	(d) <i>Be, Mg, Ca</i> ubstances is used in the	, <i>K, Kb</i> Jahoratory for fast
	(c) <i>Fe</i>	(d) Mg	01.	drying of neutral gases	[AllM	IS 1998; AFMC 1999]
49.	In India at the occasion of m flame. Which one of the follo	arriages, the fire works used give gree wing radicals may be present[CPMT 194 MP PET 200	en 30; AFMC 198 2]	(a) Sodium phosphate 89; MP PMT 2001; (b) Phosphorus pentoxic	de	
	(a) <i>Na</i>	(b) <i>K</i>		(c) Sodium sulphate	11 • 1	
	(c) <i>Ba</i>	(d) <i>Ca</i>	62	(d) Annyarous calcium	chioride can be represented by	the configuration
50.	$CaCO_3 \square CaO + CO_2$ res	action in a line goes to completic	on 02.	$[Kr]5s^2$?	can be represented by	
	because	[AFMC 200	5]	$\left[\mathbf{M} \right] \mathbf{J} \mathbf{J} \mathbf{J}$		
	(a) CaO does not react to	CO_2 to give $CaCO_3$		(a) Ca	(b) Sr	
	(b) Backward reaction is ver	ry slow	6-	(c) Ba	(d) <i>Ka</i>	
	(c) CO_2 formed escapes o	ut	63.	Point out the incorrect st	atement regarding <i>Be</i> (Group-IIA)
	(d) None of these			(a) It forms an ionic car	·bide	[//// //// ////////////////////////////
51.	The wire of flash bulb is mad	le of [CPMT 198	8]	(b) Its carbonate decom	poses on heating	
	(a) Mg	(b) <i>Cu</i>		(c) Its halides are covale	ent	
	(c) <i>Ba</i>	(d) Ag	_	(d) It is easily attacked	by water	
52.	Bone ash contains	[KCET 199	64. 2]	Beryllium differs from re-	st of the members of its	family (Group-11A)
	(a) CaO	(b) $CaSO_{A}$	-	many ways. The reason		[MP PMT 1997]
	(c) $Ca_{-}(PO_{+})$	(d) $C_a(H, PO_{\perp})$		(a) Small size and highe	er electronegativity	
	$(c, cu_3(c_4)_2)$			(b) Small size and lower	· electronegativity	
53.	A substance absorbs CO_2	and violently reacts with water. The	at 81	(c) Large size and lower	r ionisation energy	
	(a) $CaCO_{-}$	(h) <i>CaO</i>	~] 62	(u) Large size and large	soluble in $H \cap i_{\alpha}$	[PLII 2021]
	(-) 00003	(0) 0000	0.0	The oxide, which is dest s	1120 is	

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	(a) $Ba(OH)_2$	(b) $Mg(OH)_2$	79.	Which of the alkaline earth metals is strongest reducing agent
	(c) $Sr(OH)_2$	(d) $Ca(OH)_2$		(a) <i>Ca</i> (b) <i>Sr</i>
56.	The property of the alkalin	e earth metals that increases with their		(c) Ba (d) Mg
	atomic number is	[BHU 2001]	80.	Plaster of paris hardens by [CPMT 1994
	(a) lonisation energy			(a) Giving off CO_2 (b) Changing into $CaCO_3$
	(b) Electronegativity (c) Solubility of their sulpl	nates		(c) Uniting with water (d) Giving out water
	(d) Solubility of their hydr	oxides	81.	Which is not soluble in water [CPMT 1994]
i 7.	In the Alkaline earth meta covalent compound is	als, the element forming predominantly [BHU 2001]		(a) $CaCO_3$ (b) $BaCO_3$ (c) $SrCO_3$ (d) All of these
	(a) Be	(b) <i>Mg</i>	82.	The correct order of the increasing ionic character is
	(c) Sr	(d) <i>Ca</i>		[MNR 1991; AFMC 1998
8.	A mixture of lime paste is s	and, water and [RPMT 1997]		(a) $BeCl_2 < MgCl_2 < CaCl_2 < BaCl_2$
	(a) Gypsum	(b) Slacked lime		(b) $BeCl_{a} < MeCl_{a} < BaCl_{a} < CaCl_{a}$
	(c) Quick lime	(d) Lime stone		$(b) D = C \left[-c \right] = C \left[-c \right] = M_{0} \left[C \right] = C \left[-c \right]$
9.	The formula for calcium chl	orite is [CBSE PMT 1994, 96]		(c) $BeCl_2 < BaCl_2 < MgCl_2 < CaCl_2$
	(a) $Ca(ClO_4)_2$	(b) $Ca(ClO_3)_2$		(d) $BaCl_2 < CaCl_2 < MgCl_2 < BeCl_2$
	(c) CaClO ₂	(d) $Ca(ClO_2)_2$	83.	$MgCl_2.6H_2O$ when heated gives [CPMT 1997
0.	Which pair of substances g react with water	gives same gaseous product, when these [CBSE PMT 1994]		(a) Magnesium oxychloride(b) Magnesium dichloride
	(a) Ca and CaH_2	(b) Na and Na_2O_2		(c) Magnesium oxide
	(c) K and KO_2	(d) Ba and BaO_2		(d) Magnesium chloride
1.	Magnesium does not decom	pose the [AFMC 1999]	84.	Which of the following hydroxide is insoluble in water
	(a) Steam	(b) Hot water		[A11MS 200
	(c) Cold Water	(d) Semi hot water		(a) $Be(OH)_2$ (b) $Mg(OH)_2$
2.	Alkaline earth metals are de	enser than alkali metals because metallic		(c) $Ca(OH)_2$ (d) $Ba(OH)_2$
	bonding is	[A11MS 1999]	85.	Which of the following statements is false [BHU 200;
	(a) Stronger	(b) Weaker		(a) <i>CaOCl</i> gives <i>OH</i> , <i>Cl</i> and <i>OCl</i> in aqueous solution
2	(c) Not present	(d) Volatile		(b) Diamond and graphite are allotrops of carbon
J.	number is (a) lonisation energy	[IIT 1997]		(c) Bleaching action of <i>Cl</i> in moist condition is not permanent(d) Calomel is <i>HgCl</i>
	(b) Solubility of their hydr	oxides	86.	A metal M readily forms its sulphate MSO_4 which is water
	(c) Solubility of their sulpl(d) Electronegativity	hates		soluble. It forms its oxide MO which becomes inert on heating. I forms its insoluble hydroxide $M(OH)_{2}$ which is soluble i
/4.	A metal is burnt in air and	the ash on moistening smells of $\ N\!H_3.$		NaOH solution. Then <i>M</i> is [AIEEE 2002]
	The metal is	[KCET 1996]		(a) Ma (b) Ba
	(a) <i>Na</i>	(b) <i>Fe</i>		(a) Mg (b) Du
	(c) Mg	(d) Al	0-	(c) Ca (d) Be
75.	Alkaline earth metals come	under [Bihar MEE 1996]	87.	In the lime (kin), the reaction
	(a) Halogens	(b) Representative elements		$CaCO_3(s) \rightarrow CO_2(g)$ goes to completion because
	(c) Transition elements	(d) Inner transition elements		[Kerala (Engg.) 2002
6.	Which of the following strongest base	alkaline-earth metal hydroxides is the [CPMT 1996]		 (a) Of high temperature (b) <i>CaO</i> is more stable than <i>CaCO</i>₃
	(a) $Be(OH)_2$	(b) $Mg(OH)_2$		(c) CO_2 escapes simultaneously
	(c) $Ca(OH)$	(d) Ba(OH)		(d) $C_{2}Q$ is not dissociated
7	Which one of the following (e)	$(0) Du(OH)_2$	88	The ionic compound $BaSO_{i}$ is insoluble in water due to
7.	which one of the following	[Pb. PMT 1998]	00.	
	(a) $Be(OH)_2$	(b) $M_g(OH)_2$		(cPMT 1999) (a) High lattice energy (b) Low lattice energy
	(c) $Al(OH)$	(A) Si(OH)		(c) Low hydration energy (d) Both (a) and (c)
Q	lime store is		89.	which is used to reduced the acidity of soil [DPMT 200
υ.	(a) CaO	(b) $Ca(OH)$		(a) Calcium hydroxide (b) Ammonium sulphate
	$(a) Cut \qquad (b) D = (b) (b) (b) (b) (b) (c) $	$(0) Cu(OH)_2$		(c) Ammonium nitrate (d) Ammonium chloride
	(c) Both (a) and (b)	(d) None of these	90.	Alkaline earth metals belong to the [KCET (Med.) 200

	(a) <i>s</i> – block in periodic table		(b) As a white wash
	(b) p - block in periodic table		(c) As a constituent of tooth paste
	(c) d – block in periodic table		(d) For the preparation of <i>RCC</i>
	(d) f – block in periodic table	104.	magnesium for protection from rusting. Magnesium offers
91.	The element having atomic number 56 belongs to		protection to iron against corrosion because it
	[AFMC 2002]		[DPMT 2004; BHU 2004]
	(a) Actimides (b) Alkalme earth metals (c) Transition series (d) Lanthanides		(a) Prevents air from reaching the surface of iron
92.	The thermal stability of alkaline earth metal carbonates		(c) is higher than iron
	$MgCO_3, CaCO_3, BaCO_3$ and $SrCO_3$ decreases as		(d) Forms a corrosion-resistance alloy with iron
	[MP PMT 2002]	105.	Among K , Ca , Fe , and Zn , the element which can form more
	(a) $CaCO_3 > SrCO_3 > MgCO_3 > BaCO_3$	-	than one binary compound with chlorine is
	(b) $BaCO_3 > SrCO_3 > MgCO_3 > CaCO_3$		[CBSE PMT 2004]
	(c) $BaCO_3 > SrCO_3 > CaCO_3 > MgCO_3$		(a) K (b) Ca
	(d) $M_{Q}CO_{q} > CaCO_{q} > SrCO_{q} > BaCO_{q}$	106	(c) Fe (d) Zn
03	A certain metal M is used to prepare an aptacid which is used as a	100.	(a) $M\sigma$ (b) B
50.	medicine in acidity. This metal accidently catches fire which can not		$\begin{array}{c} (c) & AI \\ (c) & AI \end{array} \qquad (d) & C \\ \end{array}$
	be put out by using CO_2 based extinguishers. The metal ${\cal M}$ is	107.	A sodium salt on treatment with $MgCl_2$ gives white precipitate
	(a) <i>Ca</i> (b) <i>C</i>	-	only on heating. The anion of the sodium salt is
	(c) <i>Mg</i> (d) All of these		[IIT JEE Screening 2004]
94.	$Be(OH)_2$ is insoluble in water while $Ba(OH)_2$ is highly soluble		(a) HCO_3^- (b) CO_3^{2-}
	due to [AMU 2002]		(c) NO^{-} (d) SO^{2-}
	(a) Bond order (b) Lattice energy difference	-	
95.	Which of the following gives a green colour to flame	108.	$MgCl_2.6H_2O$. When heated gives [MHCET 2003]
	[AFMC 2001]		(a) Magnesium oxide
	(a) Barium (b) Calcium		(b) Magnesium dichloride
~6	(c) Strontium (d) None of these		(d) Magnesium chloride
90.	Sparingly soluble salt is $[KPM1 1999]$	109.	Mg burns in CO to produce [Pb.PMT 2001]
	(a) KCi (b) $NaCi$		(a) MgO_2 (b) $MgCO_3$
07	Among the alkaline earth metals the element forming predominantly		(c) $MgQ + CQ$ (d) $MgQ + C$
97.	covalent compound is [MP PET 1999]	110.	Sorel's cement is [Pb.CET 2003]
	(a) Barium (b) Strontium		(a) Portland cement $+MgO$
- 0	(c) Calcium (d) Berylium		(b) $MaCl CaSiO 2HO$
98.	Peroxide bond is present in [RPET 2003]		$(b) MgCl_2.Cu5lO_3.2ll_2O$
	(a) <i>MgO</i> (b) <i>CaO</i>		(c) $CaSiO_3.MgCO_3$
	(c) Li_2O (d) BaO_2		(d) $MgCl_2.5MgO.xH_2O$
99.	Least ionic character is found in [CPMT 1993]	111.	Colemnite is [AFMC 2004]
	(a) Mg (b) Sr		(a) $Ca[B_3O_4(OH)_2].2H_2O$
	(c) Ca (d) Ra		(b) $Ca_2B_6O_{11}.5H_2O$
100.	respectively are [Pb. PMT 1999]		(c) $Ca(OH)_{2}$
	(a) 1/2 and 2 (b) 2 and 1/2		$(1) N_{\alpha} = P = Q = 2H = Q$
	(c) 2 and 1 (d) 5 and 2		(d) $Na_2B_4O_7.2H_2O$
101.	Which of the following is formed when calcium combines with		Boron family
	(a) <i>Ca</i> (b) <i>CaO</i>		Deron ranny
	(c) CaO_2 (d) Ca_2O_2	1.	Which of the following statements about H_3BO_3 is not correct
102.	Slow acting nitrogenous fertilizer among the following is		(a) It is a strong tribasic acid
	[DCE 2003]		(b) It is prepared by acidifying an aqueous solution of borax
	(a) NH_2CONH_2 (b) NH_4NO_3		(c) It has a layer structure in which planar BO_3 units are joined
	(c) $CaNCN$ (d) KNO_3		by hydrogen bonds
103.	Plaster of paris is used [Pb. CET 2000; CPMT 2000]		(d) It does not act as proton donor but acts as a Lewis acid by
	(a) In surgery and dentistry		accepting hydroxyl ion

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s and p-Block Elements 765

	700 5 and p-block Liements				
2.	The type of hybridisation of boron in diborane is		(a) Gallium	(b) Indium	
	[CPMT 199	99]	(c) Boron	(d) Aluminiu	Im
	(a) <i>sp</i> -hybridisation	14.	Which of the following is m	ost acidic [BHU 199	8]
	(b) sp^2 - hybridisation		(a) Na_2O	(b) MgO	
	(c) sp^3 - hybridisation		(c) Al_2O_3	(d) <i>CaO</i>	
	(d) sp^3d^2 - hybridisation	15.	When orthoboric acid (H_3)	BO_3) is heated, the	residue left is
3.	In the reaction $B_2O_2 + C + Cl_2 \rightarrow A + CO$. The A is				[Pb. PMT 2002]
	[Pb. PMT 20]	001	(a) Metaboric acid	(b) Boron	
	(a) BCl_2 (b) BCl_2	16	(c) Boric anhydride	(d) Borax a dimoria balidos	
	$(r) B Cl \qquad (d) CCl$	10.	which of the following form	Reference manues	oorkee Qualifying 1998]
	(c) $B_2 C t_2$ (d) $C C t_2$		(a) <i>Al</i>	(b) <i>Mg</i>	
ŀ •	The molecular formula of felspar is $[MP PMT 2003]$		(c) In	(d) <i>Ga</i>	
	(a) $\mathbf{K}_2 O.A l_2 O_3.05 l O_2$ (b) $\mathbf{K}_2 O.5 A l_2 O_3.05 l O_2$	17.	The liquid field metal expar	ding on solidification	i is
	(c) Na_3AlF_6 (d) $CaSO_4.2H_2O$				[AIIMS 2004]
j.	The most acidic of the following compounds is		(a) <i>Ga</i>	(b) AI	
	[Bihar CEE 199	95]	(c) $Z\pi$	(d) Cu	1:1
	(a) P_2O_3 (b) Sb_2O_3	10.	in solution of non-polar sol	s dimer, $Al_2 Cl_6$ in wents such as benzen	e When dissolved in
	(c) B_2O_3 (d) As_2O_3		water, it gives	vents such as benzen	[AIEEE 2004]
i.	Identify the statement that is not correct as far as structure diborane is concerned [Pb. PMT 199	of 98]	(a) $[Al(OH)_6]^{3-} + 3HC$	<i>l</i> (b) $[Al(H_2 c)]$	$(D)_6]^{3+} + 3Cl^{-}$
	(a) There are two bridging hydrogen atoms in diborane		(c) $Al^{3+} + 3Cl^{-}$	(d) Al_2O_3 -	+6HCl
	(b) Each boron atom forms four bonds in diborane	19.	The hardest substance amo	ngst the following is	
	(c) The hydrogen atoms are not in the same plane in diborane				[Kerala PMT 2004]
	(d) All <i>B</i> - <i>H</i> bonds in diborane are similar		(a) Be_2C	(b) Graphite	
•	Soft heavy metal melts at $30^{\circ}C$ and is used in making he sensitive thermometers the metal is	eat nol	(c) Titanium	(d) SiC	
	(a) Galium (b) Sodium	J 0]	(e) B_4C		
	(c) Potassium (d) Caesium	20.	Which of the following is k	nown as inorganic be	nzene
•	Which of the following is formed when aluminium oxide and carb	on	(a) Borazine	(b) Boron ni	[PB. CE I 2001] tride
	is strongly heated in dry chlorine gas		(c) <i>p</i> -dichlorobenzene	(d) Phosphor	nitrilic acid
	(a) Aluminium chloride	21.	Which of the following is or	nly acidic in nature	
	(b) Hydrate aluminium chloride				[AIIMS 2004]
	(c) Anhydrous aluminium chloride		(a) $Be(OH)_2$	(b) $Mg(OH$	$()_2$
	(d) None of these		(c) $B(OH)_3$	(d) $Al(OH)$	3
•	Which metal burn in air at high temperature with the evolution	of 22.	Moissan boron is		[DCE 2003]
	much heat [UPSEAT 1999, 20	01]	(a) Amorphous boron of a	ıltra purity	
	(a) Cu (b) Hg		(b) Crystalline boron of ul	tra purity	
	(c) <i>Pb</i> (d) <i>Al</i>		(c) Amorphous boron of l	ow purity	
).	Aluminium hydroxide is soluble in excess of sodium hydroxi forming the ion [AMI] 20	de 01	(d) Crystalline boron of lo	w purity	
	$() + 10^{+3}$ () (10^{-3})	23.	Which of the following does	s not exist in free for	m
	(a) AlO_2^{**} (b) AlO_2^{**}				[Kerala PMT 2004]
	(c) AlO_2^- (d) AlO_3^-		(a) BF_3	(b) BCl_3	
	Boron form covalent compound due to [Pb. PMT 200	00]	(c) BBr_3	(d) <i>BH</i> ₃	
	(a) Higher ionization energy		(e) None of these		
	(b) Lower ionization energy	24.	Alumina is		[DCE 2002]
	(c) Small size		(a) Acidic	(b) Basic	
	(d) Both (a) and (c)		(c) Amphoteric	(d) None of	these
	In diborane, the two $H - B - H$ angles are nearly	25.	The most abundant metal in	n the earth crust is	
	[AllMS 200 (a) 60°, 120° (b) 95°, 120°	נכי	(a) Al	(\mathbf{b}) $C_{\mathbf{c}}$	[Pb. CET 2004]
			(4) / 1	(0) Ca	

(d) 120°, 180°

Which of the following is a non-metal [MP PMT 1999]

(c) Fe

26.

(c) 95°, 150°

13.

(d) Na

Crystalline metal can be transformed into metallic glass by

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		[NCERT 1984]	36.	Aluminium is more reactive than iron. But aluminium is less easily
	(a) (L)	Alloying		(a) Aluminium is a noble metal
	(D)	Pressing into thin plates		(b) Oxygen forms a protective oxide layer
	(c)	Slow cooling of molten metal		(c) Iron undergoes reaction easily with water
05	(a)	very rapid cooling of a spray of the molten metal		(d) Iron forms mono and divalent ions
27.	wn	Ich metal is protected by a layer of its own oxide	37.	Aluminium vessels should not be washed with materials containing
	<i>(</i>)			washing soda since [KCET 1993
	(a)	Al (b) Ag		(a) Washing soda is expensive
	(c)	Au (d) Fe		(b) Washing soda is easily decomposed
28.	Aluı	minium is a self-preserving metal, because		(c) Washing soda reacts with aluminium to form soluble aluminate
	(a)	It is not tarnished by air		(d) Washing soda reacts with aluminium to form insoluble
	(b)	A thin film of basic carbonate on its surface	28	Which of the statements about aphydrous aluminium shlorida is
	(c)	A non-porous layer of oxide is formed on its surface	30.	correct [IIT 1981
	(d)	It is not affected by salt water		(a) It exists as <i>AICl</i> ₂ molecule
29.	Anh	ydrous $AlCl_3$ cannot be obtained from which of the following		(b) It is not easily hydrolygod
	reac	ctions [CPMT 1987]		(b) It is not easily hydrolysed
	(a)	Heating $AlCl_3.6H_2O$		(c) It sublimes at $100^{\circ}C$ under vacuum
	(b)	By passing dry HCL over hot aluminium powder		(d) It is a strong Lewis base
	(0)		39.	Common alum is
	(c)	By passing dry Cl_2 over hot aluminium powder		[DPMT 1982; CPMT 1978; AMU 1982, 83]
	(d)	By passing dry $\ Cl_2$ over a hot mixture of alumina and coke		(a) $K_2 SO_4 . Al_2 (SO_4)_3 . 24H_2O$
30.	An	element A dissolves both in acid and alkali. It is an example of [NCEF	RT 1972]	(b) $K_2 SO_4 . Cr_2 (SO_4)_3 . 24H_2O$
	(a)	Allotropic nature of <i>A</i> (b) Dimorphic nature of <i>A</i>	-	(c) $K_2 SO_4 Fe_2 (SO_4)_2 .24H_2O$
	(c)	Amorphous nature of A (d) Amphoteric nature of A		$(A) (NH) SO E_0 SO 6H O$
31.	Hyd	lrogen gas will not reduce [11T 1984]		(d) $(M_4)_2 SO_4 ReSO_4 SM_2 O$
	(a)	Heated cupric oxide	40.	Which of the following is not true about potash alum
	(b)	Heated ferric oxide		(a) Its empirical formula is $KAI(SO)$ 12H O
	(c)	Heated stannic oxide		(a) its empirical formula is $Ref(50_4)_2 \cdot 1211_2 \circ$
	(d)	Heated aluminium oxide		(c) It is used in dvaing industries
32.	Con	nc. HNO ₃		(d) On heating it melts in its water of crystallization
	(a)	Reacts with aluminium vigrously	41.	Which one of the following is correct statement
	(b)	Reacts with aluminium to form aluminium nitrate		(a) The hydroxide of aluminium is more acidic than that of boron
	(c)	Does not react with aluminium		(b) The hydroxide of boron is basic, while that of aluminium is
	(d)	Reacts with platinum		amphoteric
22	(-) Ah	udroug AICL is obtained from		(c) The hydroxide of boron is acidic, while that of aluminium is amphoteric
33.	Ann			(d) The hydroxide of boron and aluminium are amphoteric
		[BHU 1980; CPMT 1982]	42.	AlCl ₃ is [AFMC 1995
	(a)	HCl and aluminium metal		(a) Anhydrous and covalent (b) Anhydrous and ionic
	(b)	Aluminium and chlorine gas		(c) Covalent and basic (d) Coordinate and acidic
	(c)	Hydrogen chloride gas and aluminium metal	43	Aluminium (III) chloride forms a dimer because
	(d)	None of the above		[CBSE PMT 1995]
34.	Whi	ich is true for an element R present in III group of the periodic		(a) Higher coordination number can be achieved by aluminium
				(c) Aluminium helongs to III group
	(a)	it is gas at room temperature		(d) It cannot form a trimer
	(b)	It has oxidation state of +4	44.	Aluminium has a great affinity for oxygen and its oxidation is ar
	(c)	It forms R_2O_3		exothermic process. This fact is made use of in
	(d)	It forms RX_2		[MP PMT 1997]
	(-)			(a) Preparing thin folis of aluminium (b) Making utangila
35.	Whe	en At is added to KUH solution [NCEPT 1074 76, CDFFT 1077]		(c) Prenaring duralumin allov
	(a)	[NCERT 1974, 70; CMMT 1977]		(d) Thermite welding
	(a) (b)	Oxygen is evolved	45.	Number of water molecules in Mohr's salt is
	(c)	Water is produced	-	[CPMT 1997; AIIMS 2001; JIPMER 2001
	(d)	Hydrogen is evolved		(a) 7 (b) 6
	. /			(c) 5 (d) 8

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46.	Which of the following is an amphoteric oxide		(a) Fused cryolite with felspar
		[BHU 2001]	(b) Fused cryolite with fluorspar
	(a) MgO (b) Al_2O_3		(c) Pure alumina in molten cryolite
	(c) Cl_2O_7 (d) Ti_2O_2	58	(d) Pure alumina with bauxite and molten cryolite Aluminium is obtained by [KCFT 1002: RPMT 2002]
47	Aluminium oxide is not reduced by chemical reactions	since	(a) Reducing ALQ , with coke
77.	wanning oxide to not readeed by chemical reaction.	[KCET 2002]	(a) reducing $m_2 \sigma_3$ with conce
	(a) Aluminium oxide is reactive	[]	(b) Electrolysing Al_2O_3 dissolved in Na_3AlF_6
	(b) Reducing agents contaminate		(c) Reducing Al_2O_3 with chromium
	(c) Aluminium oxide is highly stable		(d) Heating alumina and cryolite
	(d) The process pollutes the environment	59	9. In the electrolysis of alumina, cryolite is added to
48.	Aluminium is not used	[DPMT 2002]	[IIT 1986; BHU 1987]
	(a) In silvery paints		(a) Increase the electrical conductivity
	(b) For making utensils		(c) Minimise the anodic effect
	(c) As a reducing agent		(d) Remove impurities from alumina
	(d) As oxidizer in metallurgy	60	0. The function of fluorspar in the electrolytic reduction of alumina
49.	In the thermite process the reducing agent is		dissolved in fused cryolite (Na_3AlF_6) is
		[Pb. PMT 2002]	[KCET 1993; IIT 1993]
	(a) <i>AI</i> (b) <i>C</i>		(a) As a catalyst
	(c) Mg (d) Na		(b) To lower the temperature of the melt and to make the fused
50.	in Goldschmidt authinothermic process, thermite con	[KCFT 2002]	(c) To decrease the rate of oxidation of carbon at the anode
	(a) 3 parts of $A_{l_1}O_{l_2}$ and 4 parts of A_{l_2}	[Repr 2003]	(d) None of the above
	(a) $\frac{1}{2}$ parts of $\frac{1}{12}$ $\frac{1}{2}$ and $\frac{1}{2}$ parts of $\frac{1}{12}$	61.	For purification of alumina, the modern processes most useful when
	(b) 3 parts of Fe_2O_3 and 2 parts of Al		(i) the impurity present is a lot of iron oxides and (ii) the impurity
	(c) 3 parts of Fe_2O_3 and 1 part of Al		present is a lot of silica, are
	(d) 1 part of Fe_2O_3 and 1 part of AI		(b) For (i) Hall's process; for (ii) Serpeck's process
51.	Bauxite containing impurities of iron oxide is purified	by	(c) For (i) Serpeck's process; for (ii) Baeyer's process
	(cPMT) (a) Heap's presses (b) Sermed's pres	987; AIIMS 1998]	(d) For (i) Baeyer's process; for (ii) Serpeck's process
	(a) Hoop's process (b) Serpeck's proc (c) Baever's process (d) Electrolytic pr	62 62	2. For the electrolytic production of aluminium, (i) the cathode and (ii)
52.	In the purification of bauxite by Hall's process		(a) (i) Platinum and (ii) Iron
-	(a) Bauxite are is heated with $NaOH$ solution at	$50^{\circ}C$	(b) (i) Copper and (ii) Iron
	(b) Bouvite one is fused with Na CO	50 C	(c) (i) Copper and (ii) Carbon
	(b) bauxite of e is fused with $14a_2 \\ CO_3$		(d) (i) Carbon and (ii) Carbon
	(c) Bauxite ore is fused with coke and heated at current of nitrogen	$1800^{\circ}C$ in a 63	3. In the commercial electrochemical process for aluminium extraction, the electrolyte used is [11T-JEE 1999]
	(d) Bauxite ore is heated with $NaHCO_3$		(a) $Al(OH)_3$ in $NaOH$ solution
53.	Which one is used as a bye-product in Serpeck's proc	ess	(b) An aqueous solution of $Al_2(SQ_1)_2$
	(a) NH_3 (b) CO_2		(c) A h i f $A \downarrow O = 1 N_2 A I E$
	(c) N_2 (d) PH_3		(c) A molen mixture of Al_2O_3 and Na_3Alr_6
54.	In the metallurgy of aluminium, cryolite is mixed in t	ne molten state	(d) A molten mixture of $AlO(OH)$ and $Al(OH)_3$
	because it	[Roorkee 1995] 64	4. In electrolysis of aluminium oxide which of the following is added to
	(a) Increases the melting point of alumina (b) Oridices alumina		(a) Silica (b) Cryclita
	(c) Beduces alumina		(d) Silicate
	(d) Decreases the melting point of alumina	65	5. The purification of alumina is called
55.	In the electrolytic extraction of aluminium, cryolite is	used	[CPMT 1997; AFMC 1998; A11MS 1999]
	[NCERT	1981; CPMT 1989;	(a) Bosch process (b) Caster process
	(a) Ta abtain mara aluminium	P PMT 2000, 02]	(c) Baeyer's process (d) Hoop's process
	(b) To decrease temperature to dissolve bauxite	66	6. Electrolytic reduction of alumina to aluminium by Hall-Heroult
	(c) To protect the anode		process is carried out in the presence of
	(d) As reducing agent		[IIT-JEE (Screening) 2000]
56.	In the extraction of aluminium, bauxite is dissolv	ved in cryolite	(a) $NaCl$
	because		(D) Fluorite
	(a) It acts as a solvent (b) It reduces malting point of aluminium orida		(d) Cryolite which forms a melt with lower melting temperature
	(c) It increases the resistance of aluminium oxide	67	(u) Cryonte which forms a melt with higher melting temperature
	(d) Bauxite becomes active	07	bauxite, cryolite is added to the charge in order to

- $(d) \quad \text{Bauxite becomes active} \\$
- In the extraction of aluminium the electrolyte is 57.

[CBSE PMT 1989; AIEEE 2002]

 $(a) \quad \mbox{Minimize the heat loss due to radiation}$

[KCET 2004]

- (b) Protect aluminium produced from oxygen
- (c) Dissolve bauxite and render it conductor of electricity
- (d) Lower the melting point of bauxite

68.

(a)

Hoop's process is used for the purification of the metal

[MP PET 1995; MP PMT 2001]

- (a) *Al* (b) *Zn*
- (c) Ag (d) Cu

 Purification of aluminium done by electrolytic refining is known as [CPMT 1989; CBSE PMT 1999; RPET 2003; BCECE 2005]

- Serpeck's process (b) Hall's process
- (c) Baeyer's process (d) Hoop's process
- **70.** In the Hoope's process for refining of aluminium, the fused materials form three different layers and they remain separated during electrolysis also. This is because

[MP PET 1996]

- (a) The upper layer is kept attracted by the cathode and the lower layer is kept attracted by the anode
- (b) There is special arrangement in the cell to keep the layers separate
- (c) The 3 layers have different densities
- (d) The 3 layers are maintained at different temperatures
- **71.** During metallurgy of aluminium bauxite is dissolved in cryolite because
 - (a) Bauxite is non-electrolyte
 - (b) Cryolite is a flux
 - (c) Cryolite acts as an electrolyte
 - $(d) \quad \text{All are correct} \\$
- **72.** For the electrolytic refining of aluminium, the three fused layers consist of

	Bottom Layer	Middle Layer	Upper Layer
(a)	Cathode of pure	Cryolite and	Anode of Al and
	Al	fluorspar	<i>Cu</i> alloy
(b)	Cathode of Al and	Bauxite and	Anode of pure Al
	<i>Cu</i> alloy	cryolite	
(c)	Anode of Al and	Cryolite and	Cathode of pure
	<i>Cu</i> alloy	barium fluoride	Al
(d)	Anode of impure	Bauxite, cryolite	Cathode of pure
	Al	and fluorspar	Al

73. Heating an aqueous solution of aluminium chloride to dryness will give [AIEEE 2005]

(b) Al_2Cl_6

- (a) AlCl₃
- (c) Al_2O_3 (d) $Al(OH)Cl_2$
- **74.** The structure of diborane (B_2H_6) contains

[AIEEE 2005]

- (a) Four 2c-2e bonds and two 3c-2e bonds
- (b) Two 2c-2e bonds and four 3c-2e bonds
- (c) Two 2c-2e bonds and two 3c-3e bonds
- (d) Four 2c-2e bonds and four 3c-2e bonds

75. Which of the following is the electron deficient molecule [CBSE PMT 2005]

(a)	B_2H_6	(b)	C_2H_6
(c)	PH_3	(d)	SiH_4

76. In Hall's process, the main reagent is mixed with

[AFMC 2005]

[Kerala CET 2005]

(a)	NaF	(b)	Na_3A	lF_6	

(c) AlF_3 (d) None of these

77. Acedic strength of Boron trihalide are in order of

- (a) $BF_3 < BCl_3 < BBr_3 < BI_3$
- (b) $BI_3 < BBr_3 < BCl_3 < BF_3$
- (c) $BBr_3 < BCl_3 < BF_3 < BI_3$
- (d) $BF_3 < BI_3 < BCl_3 < BBr_3$