Std. : 12 Sci

## GUJARAT BOARD CLASS 12 CHEMISTRY SAMPLE PAPER- SET 2 Marks : 100 Time : 2.30 hrs

## $\underline{SECTION - A} \qquad [40]$

Select correct option for following given questions.Question 1 to 40 are 1 mark M.C.Q. type. Choose correct option.

(1) Phenol dimerises in benzene having Van't Hoff factor 0.54. What is the degree of association ?

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- (c) 46 (d) 0.92
- (2) The v.p. of water at 293 K is 17.5 mm. If 18 g of  $C_6H_{12}O_6$  is added to 178.2 g of water, then the vapour pressure of the resulting solution will be :

(a)	17.325	mm	(b)	17.675	mm
(c)	15.750	mm	(d)	16.500	mm

- (3) The V.H. factor -i can not be calculated by which one of the following expressions :
  - (a)  $\pi V = \sqrt{i} nRT$

(b) 
$$\Delta T_{c} = iKf \cdot m$$

(c) 
$$\Delta Tb = iK_{b} \cdot m$$

- (d)  $\frac{P_{\text{solvent}}^{0} P_{\text{solution}}}{P_{\text{solvent}}^{0}} = i \frac{x}{(N+x)}$
- (4) The amount of solute (M.Wt. 60) that must be added to 180 g of water so that the vapour pressure of water is lowered by 10% is :

(a) 30 g	(b) 60 g
(c) 120 g	(d) 12 g

 (5) What is the osmotic pressure of 0.0020 m sucrose (C<sub>12</sub>H<sub>22</sub>O<sub>11</sub>) solution at 293 K ?

(a) 4870 Pa	(b) 4.87 Pa

- (c) 0.00487 Pa (d) 0.33 pa
- (6) One kg of a sea water sample contains 6 mg of dissolved O<sub>2</sub>. The ppm of O<sub>2</sub> in a sample.
  - (a) 0.6 (b) 6.0 (c) 60.0 (d) 16.0
- (7) Which one of the following shows negative deviation from Raoult's law ?
  - (a) Ethanol and acetone
  - (b) Benzene and toluene
  - (c) Acetone and chloroform
  - (d) Chloroethane and bromoethane
- (8) The standard electrode potentials of elements A, B and C are +0.68, -2.50 and -0.50 V respectively. The correct order of their reducing power is :
  - (a) A > B > C (b) A > C > B(c) C > B > A (d) B > C > A
- (9) Following metals that cannot be obtained by the electrolysis of their aqueous salt solution is :

(a) Cu,	Fe	(b)	Mg,	A

(c) Sn, Ag (d) Cr, Ni

- (10) When 9650 coulombs of electricity is drawn from the cell : Cu | Cu<sup>2+</sup> (1 M) || Ag<sup>+</sup> (1 M) | Ag
  - (a) Concentrations of copper and silver ions decrease by 0.1 M each.
  - (b) Concentrations of copper ions falls by 0.05 M and of Ag ions falls by 0.1 M
  - (c) Concentration of copper ions does not change but of Ag ions falls by 0.1 M
  - (d) Concen. of  $Cu^{2+}$  ions increases by 0.05 M and 0.1
- (11) 965 Coulomb is passed through 1 molar aq. CuSo<sub>4</sub> using Cu electrodes. The molarity of 1 M CuSO<sub>4</sub> solution after electrolysis is :
  - (a) 0.05 M (b) 0.1 M (c) 0 M (d) 1 M
- (12) CH<sub>3</sub>COCH<sub>3</sub> + NaOH + I<sub>2</sub> → CHI<sub>3</sub> + NaI + CH<sub>3</sub>COONa + H<sub>2</sub>O. Select co-efficient for the balanced reaction :
  - (a) 1, 4, 3, 1, 2, 1, 2

     (b) 1, 4, 3, 1, 3, 1, 3

     (c) 1, 4, 3, 2, 3, 1, 3

     (d) 1, 4, 1, 3, 1, 3, 1
- (13) Given that  $E^0_{cell} = 0.36$  V, the  $\Delta G^0$  for the reation is :  $Fe^{3+} + 3e^- \rightarrow Fe_{(e)}$ 
  - (a) 10.42 KJ(b) 5.21 KJ(c) 20.84 KJ(d) 3.47 KJ
- (14) Which of the following pair is having both the weak electrolytes ?
  - (a) HCl, AgNO<sub>3</sub>
    (b) NH<sub>4</sub>OH, CH<sub>3</sub>COOH
    (c) NaOH, KNO<sub>3</sub>
    (d) NaCl, NH<sub>4</sub>Cl
- (15) 0.5 A when passed through aq. AgNO<sub>3</sub> for 193 sec. deposites 0.108 g Ag. The Eq. Wt. of Ag is (Ag = 108)
  - (a) 10.8 (b) 54
  - (c) 108 (d) 216
- (16) If E<sup>0</sup> values of Ag<sup>+</sup>/Ag, K<sup>+</sup>/K, Mg<sup>2+</sup>/Mg and Cr<sup>3+</sup>/Cr are 0.80 V, -2.93 V, 2.37 V and -0.74 respectively, then correct order of the reducing power :
  - (a) Ag > Cr > Mg > K(b) Ag > Cr > Mg < K(c)  $K \stackrel{\prime}{>} Mg > Cr > Ag$
  - (d) Cr > Ag > Mg > K
- (17) Select incorrect statement/(s) ?
  - (a) In all cells, the cathode is negative and the anode is positive.
  - (b) The expression for the e.m.f. of an electrochemical cell

$$E = E^{0} - \frac{0.059}{n} \log \frac{[\text{oxidised} - \text{iron}]}{[\text{reduced} - \text{ion}]}$$

- (c) In all cells, the anode is negative and the cathode is positive
- (d) Only statement (a) and (c) are wrong.

(18)	when molten $caH_2$ is electrolysed between inert	(26)	Which oxides can not be reduced by carbon to give		
	electrodes, which of the following occurs :		the respective metals	?	
	(a) $H_2$ is liberated at cathode		(a) Cu <sub>2</sub> O, SnO <sub>2</sub>	(b) Fe <sub>2</sub> O <sub>3</sub> , ZnO	
	(b) Ca is deposited at anode		(c) CaO, K.O	(d) PbO, $Fe_3O_4$	
	(c) $H^+$ is oxidised at anode	(27)	Purest form of iron is	:	
	(d) $H_2$ is liberated at anode		(a) cast iron	(b) Pig iron	
(19)	$I_2 + 2e^- \rightarrow 2I^-, E^0_{RP} = +0.54 \text{ volt.}^4$		(c) wrought iron	(d) stainless steel	
	2 Br <sup>-</sup> + Br <sub>2</sub> $\rightarrow$ 2e <sup>-</sup> , E <sup>0</sup> <sub>OP</sub> = -1.09 volt.	(28)	The hardest variety of	ion is :	
	Fe + Fe <sup>2+</sup> $\rightarrow$ 2e <sup>-</sup> , E <sup>0</sup> <sub>OP</sub> = +0.44 volt.		(a) cast iron	(b) mild steel	
	Which of the following reation is non-		(c) hard steel	(d) wrought iron	
	spontaneous ?	(29)	Which of the following	v is not an ore ?	
	(a) $Br_2 + 2I^- \rightarrow 2Br^- + I_2$	(=>)	(a) malachite	(b) siderite	
	(b) Fe + Br <sub>2</sub> $\rightarrow$ Fe <sup>2+</sup> + 2Br <sup>-</sup>		(c) cryolite	(d) blister conner	
	(c) Fe + I <sub>2</sub> $\rightarrow$ Fe <sup>2+</sup> + 2I <sup>-</sup>	(20)	Which of the following	(a) bilister copper	
	(d) $I_2 + 2Br^- \rightarrow 2I^- + Br_2$	(30)			
(20)	When an aqueous solution of conc. NaCl is		(a) $Cu_2 S$ , FeS	(b) $CuCO_3$ , $Cu(OH)_2$	
	electrolysed by using graphite electrodes :		(c) Cu <sub>2</sub> O	(d) CuCO <sub>3</sub> , CuO	
	(a) pH of the resulting solution increases	(31)	A mineral is known as	s an ore of a metal if the	
	(b) pH of the resulting solution decreases		metal :		
	(c) as the current flows, $p^H$ of the solution around		(a) can be produced fi	om it	
	the anode increase		(b) cannot be produce	d from it	
	(d) as the cureent flows, $p^H$ of the solution around		(c) can be produced fi	om it profitably	
	the cathode increase		(d) none		
(21)	The SRP of $Ag^+ + e^- \rightarrow Ag$ is 0.799 V. At what	(32)	Saphire is a mineral o	f :	
	concentration of $Ag^+$ ion, potential of the $Ag/Ag^+$		(a) Ag	(b) Al	
	electrode will become 0.622 volt ?		(c) Au	(d) Pt	
	(a) $10^{-1}$ M (b) $10^{-2}$ M	(33)	The role of reducing a	agent during extraction of	
	(c) $10^{-3}$ M (d) $10^{-4}$ M		metal is :		
(22)	Which aq. solutions is mention wrongly that		(a) to make +ve value of $\Delta G^{\circ}$		
	remains reutral, acidic or basic after electrolysis ?		(b) to make -ve value of $\Delta G^{\circ}$		
	(a) conc. NaCl $\rightarrow$ basic		(c) to make zero value of $\Delta G^{\circ}$		
	(b) $CuSO_4 \rightarrow acidic$		(d) to maintain constant value of $\Delta G^{\circ}$		
	(c) dil. NaCl $\rightarrow$ neutral	(34)	<ul> <li>Which oxides are present as impurities in baux</li> <li>winexed 2</li> </ul>		
	(d) $K_2SO_4 \rightarrow acidic$		mineral ?		
(23)	Iron ore is obtained by which process ?		(a) $110_2$	(b) $\operatorname{Fe}_2 O_3$	
	(a) electrolysis (b) roasting	(25)	(c) $SiO_2$	(d) Given all	
	(c) magnetic treatment (d) froth floatation	(35)	Correct formula of slag	g can be :	
(24)	Heating pyrites in air to remove sulphur is known		(a) $CaSiO_3$	(b) $\operatorname{FeSiO}_3$	
	is :	(2()	(c) $CuSIO_3$	(d) a and b both	
	(a) calcinations (b) smelting	(36)	Extraction of metal fro	m sulphide ore is done by:	
	(c) fluxing (d) roasting		(a) smelting	(b) calcination	
(25)	Which of the following processes involves the	(2 =)	(c) hydrometallurgy	(d) electrolysis	
	smelting process ?	(37)	The cryolite is used in	the electrolytic extraction	
	(a) $ZnCO_3 \rightarrow ZnO + CO_2$		(a) to dissolve bauvite		
	(b) 2PbS + $3O_2 \rightarrow 2PbO + 2SO_2$		(b) to protect anode		
	(c) $Fe_2O_3 + 3C \rightarrow 2Fe + CO$		(c) to get more alumin	ium	
	(d) $Al_2O_3 \cdot 2H_2O \rightarrow Al_2O_3 + 2H_2O$		(d) to act as a reducing agent		
			(u) to act as a reducin	is about	

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(38)	Zone refining process i	is usded to obtain :	(50)	Which acid gives only	two series of salt ?	
	(a) Very high temperature			(a) $BCl_3 > PCl_3 >$	AsCl <sub>3</sub>	
	(b) Ultra pure oxides			(b) ECl <sub>2</sub> > AsCl <sub>2</sub> >	> PCI,	
	(c) Ultra pure Si			(c) BCL > PCL =	AsCl <sub>2</sub>	
	(d) Ultra pure metals			(d) BCI = PCI >	۵ « ۲۱	
(39)	) The metal obtained by hydrometallyrgy is :			(u) 1013 · 1013 ·	A303	
	(c) Au	(d) All	(51)	The incorrect order of	the acidic strength :	
(40)	The blister copper is a	btained by :		(a) $HClO_4 > HBrO_4$	> HIO <sub>4</sub>	
	(a) Bassemerisation	(b) roasting		(b) $HCIO_4 > HCIO_3$	> HClO <sub>2</sub>	
	(c) Calcination	(d) Electrolytic reduction		(c) $H_3PO_4 > H_3PO_3$	> H <sub>3</sub> PO <sub>2</sub>	
	GEOTI			(d) $H_2S > H_2SO_3 >$	H <sub>2</sub> SO <sub>4</sub>	
	SECTI	$\underline{ON - B} \qquad [30]$	(52)	The least acidic oxide :		
(41)	The process in which o	re is heated in air below at		(a) $N_2O_5$ (b) $P_4O_6$	(c) $As_4O_{10}$ (d) $As_4\bullet_6$	
	its m.p. is known as ;		(53)	The correct option for	compound and its name :	
	(a) roasting	(b) reduction		(a) FCI $\rightarrow$ flurorine m	10no chloride,	
	(c) calcinations	(d) distillation		BrCl → bromine n	nono chloride	
(42)	Amphoteric oxide is :			(b) $O_{2}F_{2} \rightarrow$ fluorine n	nonoxide,	
	(a) Cl <sub>2</sub> O <sub>7</sub>	(b) Bi <sub>2</sub> O <sub>3</sub>		$OF_{-} \rightarrow oxygen di-$	fluoride	
	(c) $As_2O_3$	(d) $N_2O_3$		(c) Brl $\rightarrow$ bromine mo	ono iodide,	
(43)	Phosphorus is absent i	in :		$CIF_{+} \rightarrow chlorine tr$	i-fluoride	
	(a) Chlor apatite	(b) teeth and bones		(d) HOBr $\rightarrow$ hypo bro	omous acid.	
	(c) DNA and RNA	(d) carbohydrate		NaOl -> sedium h	wnn iodide	
(44)	$P_4 + Cl_{2(limited)} \rightarrow x$	$H_2^0 \rightarrow y$ , thus, x and y are	(54)	The total number of	isomers of the molecular	
	respectively ;		(01)	formula C.H., O is :		
	(a) PCl <sub>2</sub> , H <sub>2</sub> PO <sub>2</sub>	(b) PCl <sub>3</sub> , H <sub>3</sub> PO <sub>4</sub>		(a) 2	(b) 7	
	(c) $PCl_5$ , $H_3PO_4$	(d) PCI, POCI		(c) 4	(d) 5	
(45)	The correct relation	n between oxo-acids of	(55)	Ethanoyl chloride re	acts with phenol in the	
	phosphorous and its o	xidation states is :		presence of dil. alkali	to give :	
	(a) phosphorus acid	$\rightarrow$ +1, +3		(a) ethyl benzoate	(b) m-hydroxybenzaldeyde	
	(b) Phosphoric acid	→ +5, +3		(c) phenyl acetate	(d) phenyl benzoate	
	(c) phosphorus acid	→3, +3		SECTI	ON - C [18]	
	(d) phosphoric acid	$\rightarrow$ +1, +3	356)	The correct HIPAC	$\frac{O(C, H)}{O(C, H)} = C(C, H)$	
(46)	Which Xenon compour	nds are not possible?	207	CH = CH (OH) CH is		
	(a) $XeF_6$ , $XeO_2F_2$	(b) $XeF_2$ , $XeO_3$		(a) <sup>*</sup> ?-ethyl nent-?-ene-	4-01	
	(c) $XeF_3$ , $XeO_2F$	(d) XeF <sub>4</sub> , XeOF <sub>4</sub>		(b) 2-bydrayy-4-methy	oentane	
(47)	Wrong pair of acid an	d its anhydride :		(b) 4 study want 4 and 2 st		
	(a) $H_3PO_4 \rightarrow P_4O_6$	(b) $HClO_4 \rightarrow Cl_2O_7$		(d) 4 methyl havon 2 c		
	$(c) \text{HNO}_3 \rightarrow \text{N}_2\text{O}_5$	(d) $H_2SO_4 \rightarrow SO_3$	/ <b>10</b> /1933	Which of the following	1	
(48)	Maximum number of "	'oxo"-groups are present in	(52)	maich of the following	is soluble in water ?	
	the which acid ?			(a) CHCl <sub>3</sub>	(b) $C_6 H_5 - Cl$	
	(a) m <sub>3</sub> r0 <sub>4</sub>	(b) HClO <sub>4</sub>		(c) CH <sub>2</sub> OH-CH <sub>2</sub> OH	(d) $CCl_4$	
<i>6 86</i> 1	(0) $\Pi_3 F U_2$	(d) $H_2SO_4$	(58)	Which of the followi	og has maximum boiling	
(4Y)	(a) W DO	(k) (J DA		poing ?		
	(a) $\Pi_3 \Gamma U_4$	(o) $m_3 r O_2$		(a) glycerol	(b) ethylene glycol	
	(c) $n_3 r O_3$	(a) $H_4 F_2 O_7$		(c) ethanel	(d) ethoxy ethane	

The compound which is not isomeric with diethyl (59) ether is : (a) n-propyl methyl ether (b) iso-butyl achohol (c) butanal (d) n-buryl alcohol (60) Which of the following can not give phenol ? (a) Cumene process (b) Dow process (c) BDAC salt - dil. H<sub>2</sub>SO<sub>4</sub> (d) Willamson synthesis (61) Select correct option for matching :  $(\mathbf{I})$ (11) (**p**) cyclo hexyl chloride (i) vinylic halide (q) 4-chloro pent-2-ene (ii) benzylic halide (iii) 2° - halide (r) chloro ethene (s) 1-chloro-1-phenyl ethane (iv) allylic halide r-li, s-iv] (a) [p - i,q - iii, q ii, r - iii, s - i](b) [p - iv,(c)  $[p \quad ii. \quad q-i, \quad r-iii, \quad s-iv]$ (d) (p - iii, q - ivr – i, s - ii**SECTION - D** [12] (62) Which is most acidic ? (b) o-nitro phenol (a) Phenol (c) 2, 4 - DNP (d) p-nitro phenol (63) For R - S nomenclature the correct order of priority of functional groups is : (a) -CI, -CONH<sub>2</sub>, -CHO, -COCH<sub>3</sub> (b) -COCI, -CONH,, -COCH,, -NH, (c) -COOH,  $-COCH_3$ ,  $-CONH_2$ ,  $-CH = CH_2$ (d) -OH, -NH2, -COOR, -CH3 (64) Which reaction does not give 1°-alcohol ? (A)  $CH_3 - CH = CH_2 + H_3O / H_4 \rightarrow$ (B) Butanal + NaBH<sub>4</sub> / H<sub>2</sub>O  $\rightarrow$ (C) But-2-one + NaBH<sub>4</sub> /  $H_2O \rightarrow$ (D) Ethyl benzoate + LiAlH<sub>3</sub> / H<sub>2</sub> $\bullet \rightarrow$ (b) A, C (a) A, B (d) B, D (d) B, C