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## **Solutions**

1.	Cryoscopic constant is the depression in freezing point produced by									
				[comed 2008]						
	1.1% solution	2. 1 molar so	olution	$\mathbf{\wedge}$						
	3. 1 molar solution	4. 1 N soluti	on							
2.	When mercuric iodide is	hen mercuric iodide is added to the aqueous solution								
				[BHU2008]						
	1. Freezing point is raised		2. Freezing point is	lowered						
	3. Freezing point does not	change	4. Boiling point is r	aised						
3.	Which among the following gas will greatly deviate from Henry's law i									
	water?		<u> </u>	[PMT2008]						
	1. $H_2$ 2. $N_2$	2	3. <i>CH</i> <sub>4</sub>	4. $CO_2$ 5. Ar						
4.	A 0.002 m aqueous soluti	on of an ioni	c compound <i>Co</i> ( <i>NH</i>	$_{3})_{5}(NO_{2})Cl$ freezes						
	at $-0.00732^{\circ}C$ . Number of moles of ions which 1 mol ionic compound produces									
	on being dissolves in wat	er will be; ( <i>K</i>	$C_f = -1.86^{\circ}C / m \Big)$	[CBSE2009]						
	1. 1 2.2	5	3. 3	4. 4						
5.	A solution of sucrose (mo	lar mass = 34	42 $mol^{-1}$ ) has been p	repared by						
	dissolving 68.5 g of sucrose in 1000g of water. The freezing point of the									
	solution obtained will be			[CBSE2010]						
	$\left[\left(K_{f}, for water=1.86 K kg\right)\right]$	$mol^{-1}$ )								
	1. $-0.372^{\circ}C$ 2. $-0$	$.520^{\circ}C$	3. $+0.372^{\circ}C$	4. $-0.570^{\circ}C$						
6.	<b>Pure benzene freezes at</b> 5	$.3^{\circ}C$ . A solut	ion of 0.223 g of phe	enyl acetic acid						
	$(C_6H_5CH_2COOH)$ in 4.4g	of benzene ( <i>k</i>	$K_f = 5.12  K  kg  mol^{-1}$	freezes at $4.47^{\circ}C$ .						
	From the observations or	ne can conclu	de that	[AFMC2010]						
	1. Phenyl Acetic Acid exi	sts as such in	Benzene							
	2. Phenyl Acetic Acid und	lergoes partial	l ionization in Benzer	ne						

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	3. Phenyl A	cetic A	cid un	dergoes	comp	lete ion	ization	in Ben	zene		
	4. Phenyl A	cetic A	cid dir	nerizes							
7.	Mole fraction	on of th	ne solu	te in a 🛙	1.00 m	olal ac	queous	solutio	n is [AIPMT201	11]	
	1. 1.7700		2. 0.	1770		3. 0.0	0177		4. 0.0344		
8.	The Van't I	Hoff fa	ctor <i>i</i> f	or a co	mpour	nd whi	ch und	ergoes	dissociation in o	one	
	solvent and association in other solvent is respectively [AIPM]										
	1. Greater than one and greater than one										
	<ol> <li>Less than one and greater than one</li> <li>Less than one and less than one</li> </ol>										
	4. Greater t	han one	e and le	ess than	one						
9.	The freezin	g point	depre	ession co	onstan	t for w	vater is	$-1.86^{\circ}$	$C m^{-1}$ . If 5.00 g		
	$Na_2SO_4$ is dissolved in 45.0 g $H_2O$ , the freezing point is changes by $-3.82^{\circ}C$ .										
	Calculate the Van't Hoff factor for Na <sub>2</sub> SO <sub>4</sub> .								0	ι.	
	Calculate th	he Van	't Hoff	f factor	for Na	$a_2 SO_4$ .			[AIPMT20	11]	
	<b>Calculate th</b> 1. 0.381	he Van	<b>'t Hoff</b> 2. 2.0	f <b>factor</b>	for Na	$u_2 SO_4$ . 3. 2.0	63		[AIPMT20 4. 3.11	11]	
10.	Calculate th 1. 0.381 The system	he Van <sup>a</sup> that fo	<b>'t Hoff</b> 2. 2.0 <b>orms m</b>	f factor 05 naximu	for Na m boil	$a_2SO_4$ . 3. 2.0 ing aze	63 eotrope	e is	[AIPMT20 4. 3.11 [PMT201]	11]	
10.	Calculate th 1. 0.381 The system 1. Carbon D	he Van <sup>b</sup> that fo	<b>'t Hoff</b> 2. 2.0 <b>orms m</b> de – Ao	f factor 05 naximun cetone	for Na m boil	<ul> <li>3. 2.0</li> <li>ing aze</li> <li>2. Be</li> </ul>	63 eotrope	e <b>is</b> – Tolue	[AIPMT20 4. 3.11 [PMT201: ene	11] 1]	
10.	Calculate th 1. 0.381 The system 1. Carbon D 3. Acetone	he Van <sup>5</sup> that fo <sup>visulphic</sup> – Chlor	<b>'t Hoff</b> 2. 2.0 <b>orms m</b> de – Ad	f factor 05 naximun cetone	for Na	$a_2SO_4$ . 3. 2.0 <b>ing aze</b> 2. Be 4. <i>n</i> -	63 eotrope enzene – Hexa	e <b>is</b> – Tolue ne - <i>n</i> –	[AIPMT20 4. 3.11 [PMT201] ene Heptane	11] 1]	
10.	Calculate th 1. 0.381 The system 1. Carbon D 3. Acetone 5. Ethanol -	<b>that fo</b> visulphic – Chlor – Aceto	<b>'t Hoff</b> 2. 2.0 <b>orms m</b> de – Ad coform ne	f factor 05 naximun cetone	for Na	$a_2SO_4$ . 3. 2.0 <b>ing aze</b> 2. Be 4. <i>n</i> -	63 eotrope enzene – Hexa	e <b>is</b> – Tolue ne - <i>n</i> –	[AIPMT20 4. 3.11 [PMT201] ene Heptane	11] 1]	
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