ECAT Chemistry Online Test

Sr	Questions	Answers Choice
1	The osmotic pressure of a dilute solution is directly proportional to the	A. Diffusion rate of the solute B. Ionic concentration C. Elevation in boiling point D. Flow of solvent from a concentrated to a dilute solution
2	The vant Hoff factor (1) accounts for	A. Degree of solubilisation of solute B. The extent of dissolution of solute C. The extent of dissolution of solute D. The degree of decomposition of solution
3	Equal volumes of ethylene glycol (molar mass = 62) and water (molar mass = 18) are mixed. The depression in freezing point of water is (given K_f of water = 1.86 K mol^{-1} kg and specific gravity of ethylene glycol is 1.11)	A. 0.003 B. 3.33 C. 0.333 D. 33.3
4	The weight of pure NaOH required to prepare 250 cm^3 of 0.1 N solution is	A. 4 g B. 1 g C. 2 g D. 5 g
5	50 mL of 10 N H_2SO_4. 25mL of 12 N Hcl and 40 mL of 5N HNO_3 are mixed and the volume of the mixture is made 100 mL by adding water. The normality of resulting will be	A. 1 N B. 2 N C. 3 N D. 9 N
6	0.5 M of H_2SO_4 is diluted from 1 litre to 10 litre, normality of resulting solution is	A. 1 N B. 0.1 N C. 10 N D. 11 N
7	The vapour pressure of two liquids 'p' and 'Q' are 80 and 60 torr respectively. The total vapour pressure of solution obtained by mixing 3 mole of P and 2 mol of Q would be	A. 140 torr B. 20 torr C. 68 torr D. 72 torr
8	If α us the degree of dissociation of Na_2SO_4 the vant Hoff's factor (1) used for calculating the molecular mass is	A. $1 + \alpha$ B. $1 - \alpha$ C. $1 + 2\alpha$ D. $1 - 2\alpha$
9	The weight of pure NaOH required to prepare 250 cm^3 of 0.1 N solution is	A. 4 g B. 1 g C. 2 g D. 5 g
10	Camphor is often used in molecular mass determination because	A. It is solvent for organic substances B. It is readily available C. It has a very high cryoscopic constant D. It is volatile
11	A solution contains 1.2046 x 10^{24} hydrochloric acid molecules in one dm^3 of the solution. The strength of the solution is	A. 6 N B. 2 N C. 4 N D. 8 N
12	Maximum freezing point falls in	A. Camphor B. Naphthalene C. Benzene D. Water
13	Azeotropic mixture of HCl and water has	A. 48% HCl B. 22.2% HCl C. 36% HCl D. 20.2% HCl

14	The ionic strength of a solution containing 0.1 mole/kg of KCl and 0.2 mole/kg of $CuSO_4$ is	A. 0.3 B. 0.6 C. 0.9 D. 0.2
15	Which of the statements given below concerning properties of solution, describe a colligative effect?	A. Boiling point of pure water decreases by the addition of ethanol B. Vapour pressure of pure water decreases by the addition of nitric acid C. Vapour pressure of pure benzene decreases by the addition of naphthalene D. Boiling point of pure benzene increases by the addition of toluene
16	If liquids A and B form an ideal solution	A. The enthalpy of mixing is zero B. The entropy of mixing is zero C. The free energy of mixing is zero D. The free energy as well as the entropy of mixing are each zero
17	At room temperature, the mole fraction of a solution in 0.25 and the vapour pressure of the solvent is 0.80 atm. Then the lowering of vapour pressure is	A. 0.75 B. 0.512 C. 0.80 D. 0.0512
18	When the solute is present in trace quantities the following expression is used	A. Gram per million B. Milligram percent C. Microgram percent D. Parts per million
19	The solubility of a gas in water depends upon	A. Nature of the gas B. Temperature C. Pressure of the gas D. All of the above
20	The depression of freezing point is directly proportional to	A. Mole fraction of the solution B. Molarity of the solution C. Molality of the solution D. Molarity of the solvent
21	The temperature at which the vapour pressure of a liquid becomes equal to external pressure is	A. Melting point B. Sublimation point C. Inversion point D. Boiling point
22	How much of NaOH is required to neutralize 1500 cm^3 of 0.1 N HCl?	A. 60 g B. 6 g C. 4 g D. 40 g
23	Partial pressure of a solution component is directly proportional to its mole fraction. This statement is known as	A. Henry's law B. Raoult's law C. Distribution law D. Ostwald's dilution law
24	Which substances are mixed to form a buffer solution?	A. A strong acid and its salt of a strong base B. Strong acid and its salt of weak base C. Weak acid and its salt of strong base D. Weak acid and its salt of weak base
25	The osmotic pressure of 1 m solution at 27°C is	A. 2.46 atm B. 24.6 atm C. 1.21 atm D. 12.1 atm
26	How many g of dibasic acid (mol. wt. 200) should be present in 100 ml of the aqueous solution to give 0.1 Normality?	A. 1 g B. 2 g C. 10 g D. 20 g
27	Solutions with same osmotic pressures are called	A. Hypertonic B. Hypotonic C. Isotonic D. Normal
28	The relative lowering of vapour pressure is equal to the mole fraction of the solute, This law is called	A. Henry's law B. Raoult's law C. Ostwald's law D. Arrhenius law
		A. Surface tension B. Osmotic pressure

29	Which one of the following is a colligative property?	B. Osmotic pressure
		C. Viscosity
		D. Refractive index

30	Which of the following will have the highest boiling point at 1 atm pressure?	A. 0.1 M NaCl
		B. 0.1 M Sucrose
		C. 0.1 M $BaCl_2$
		D. 0.1 M Glucose