Subject: Chemistry   **Assignment No: I**

Allotment Date: 15/04/17   **Submission Date: 25 /4 /17**

S.No	QUESTION	MARKS	LEVEL
	OBJECTIVE TYPE		
1.	What is meant by reverse osmosis?	1	Knowledge
2.	Why is the vapour pressure of an aqueous solution of glucose lower than that of water?	1	Understanding
3.	Why is it not possible to obtain pure ethanol from its aqueous solution by fractional distillation?	1	Hot
	SHORT ANSWER TYPE I		
4.	State Henry's law. Mention its two important applications.	2	knowledge
5.	Arrange the following solution in the increasing order of their osmotic pressure: a) 34.2 g/L sucrose, b) 60g/L urea, 90g/L glucose, and 58.5g/L sodium chloride.	2	understanding
6.	Determine the osmotic pressure of solution prepared by dissolving 25mg of K_2SO_4 in 2L of water at 25°C, assuming it is completely dissociated.	2	logic
7.	A 0.2 % aqueous solution of a nonvolatile solute exerts a vapour pressure of 1.004 bar at 100° C. what is the molar mass of solute.	2	Hot
	SHORT ANSWER TYPE II		
8.	Suggest the most important type of intermolecular attractive interaction in the following pair of compounds. n-hexane and n-octane, I_2 & CCl_4, $NaClO_4$ & Water, methanol and acetone, acetonitrile(CH_3CN) and acetone.	3	understanding
9.	Concentrated nitric acid used in laboratory work is 68% by mass in aqueous solution. What should be the molarity of such sample of acid if the density of solution is 1.504g/ml.	3	Multi conceptual
10.	A doctor advised a patient from high blood pressure to take less quantity of salt. i) What is the role of salt in increasing blood pressure? ii) How does low intake of salt help in reducing the blood pressure. iii) What is the value associated with this?	3	Value based
	LONG ANSWER TYPE		
11.	Calculate depression in freezing point of water when 10g of $CH_3CH_2CHClCOOH$ is added to 250g water. Ka = 1.4×10^{-3}, K_f = 1.86 KKg/mol.	5	Logic
12.	Two elements A & B form compounds having formula AB_2 & AB_4. When dissolved in 20 g benzene. 1g of AB_2 lowers the freezing point by 2.3K, Where as 1g of AB_4 lowers by 1.3K. K_f for benzene is 5.1 KKg/mol. Calculate atomic masses of A & B.	5	Hot