Solutions

Set – 1

Table 2.1: Types of Solutions

Type of Solution	Solute	Solvent	Common Examples
Gaseous Solutions	Gas	Gas	Mixture of oxygen and nitrogen gases
	Liquid	Gas	Chloroform mixed with nitrogen gas
	Solid	Gas	Camphor in nitrogen gas
Liquid Solutions	Gas	Liquid	Oxygen dissolved in water
	Liquid	Liquid	Ethanol dissolved in water
	Solid	Liquid	Glucose dissolved in water
Solid Solutions	Gas	Solid	Solution of hydrogen in palladium
	Liquid	Solid	Amalgam of mercury with sodium
	Solid	Solid	Copper dissolved in gold

Q1. Which of the following is an example of gas in gas solutions?

A. Mixture of oxygen and nitrogen gases
B. Chloroform mixed with nitrogen gas
C. Camphor in nitrogen gas
D. Solution of hydrogen in palladium

Ans. (A)

Q2. Camphor in nitrogen gas is an example of which type of solutions?

A. Gas in Gas
B. Liquid in Gas
C. Solid in Gas
D. Gas in Liquid

Ans. (C)

Q3. In chloroform mixed with nitrogen gas the solute exists in which state?

A. Solid

B. Gas
C. Liquid
D. None of the above

Ans. (C)

Q4. Which of the following is not an example of solid in solid solution?

A. Lead dissolved in Tin
B. Carbon dissolved in carbon
C. Copper dissolved in Gold
D. Amalgam of Mercury with Sodium

Ans. (D)

Q5. Which of the following is an example of Gas in Solid Solutions?

A. Camphor in Nitrogen Gas
B. Chloroform mixed in nitrogen gas
C. Solution of Hydrogen in palladium
D. Ethanol dissolved in water

Ans. (C)

Q6. Oxygen dissolved in water is an example of which type of solution?

A. Gas in Liquid
B. Liquid in Liquid
C. Solid in Liquid
D. Liquid in Gas

Ans. (A)

Set – 2

Table 2.4: Values of van't Hoff factor, *i*, at Various Concentrations for NaCl, KCl, $MgSO_4$ and K_2SO_4.

Salt	*Values of *i*			van't Hoff Factor *i* for complete dissociation of solute
	0.1 m	0.01 m	0.001 m	
NaCl	1.87	1.94	1.97	2.00
KCl	1.85	1.94	1.98	2.00
$MgSO_4$	1.21	1.53	1.82	2.00
K_2SO_4	2.32	2.70	2.84	3.00

Q1. The Van't Hoff factor for complete dissociation of NaCl is:

A. 1
B. 2
C. 3
D. 4

Ans. (B)

Q2. The Van't Hoff factor for complete dissociation of K2SO4is:

A. 1
B. 2
C. 3
D. 4

Ans. (C)

Q3. Which of the following is the correct order of values of i for the following salts at 0.1 m?

A. NaCl < KCl < $MgSO_4$< K_2SO_4
B. K_2SO_4< $MgSO_4$< KCl < NaCl
C. KCl < $MgSO_4$< NaCl < K_2SO_4
D. $MgSO_4$< KCl < NaCl < K_2SO_4

Ans. (D)

Q4. Which of the following is the correct order of values of i for the following salts at 0.001 m?

A. $MgSO_4 < NaCl < KCl < K_2SO_4$
B. $KCl < MgSO_4 < NaCl < K_2SO_4$
C. $NaCl < KCl < MgSO_4 < K_2SO_4$
D. $K_2SO_4 < MgSO_4 < KCl < NaCl$

Ans. (A)