

Statement II: The contraction in volume is solely due to the liquefaction of water vapours.

12. **Statement I:** Molarity and molality for very dilute aqueous solution is approximately equal.

Statement II: For all aqueous solution, total mass of solvent is approximately equal to total volume of solution.

13. **Statement I:** Concentration of any solution is independent from the amount of solution, but it depends on the relative amount of solute and solvent.

Statement II: Concentration of any solution has same magnitude in any unit to express concentration.

14. **Statement I:** For very dilute solutions, the strength of solution in w/w per cent and in w/v per cent have nearly equal value.

Statement II: For very dilute solution, the mass of solution becomes almost equal to the mass of solvent.

15. **Statement I:** One molar aqueous solution has always higher concentration than one molal.

Statement II: The molality of a solution depends upon the density of the solution whereas molarity does not.

Section E (Column Match)

1. Match the following

Column I			Column II
Atomic Masses			Percentage composition of the heavier isotope
Isotope I	Isotope II	Average	
(A) $Z - 1$	$Z + 2$	Z	(P) 33.33% by mole
(B) $Z + 1$	$Z + 3$	$Z + 2$	(Q) 50% by mole
(C) Z	$3Z$	$2Z$	(R) % by mass depends on Z
(D) $Z - 1$	$Z + 1$	Z	(S) 75% by mass

2. Match the following

Column I	Column II
(A) 0.875 mole O_2 gas	(P) 28 g
(B) 1.00 mole N_2 gas	(Q) 22.4 L at $0^\circ C$ and 1 atm
(C) 2.00 mole $NaNO_3$	(R) 1.2046×10^{24} atoms of nitrogen
(D) 0.4375 mole K_2SO_4	(S) 1.0540×10^{24} atoms of oxygen
	(T) 76.125 g

3. Match the following

Column I	Column II
(A) 3 mole of $Co(NH_3)_4SO_4$	(P) 3 mole of S atom
(B) 1 mole $FeKCo(NO_2)_6$	(Q) 1 mole Fe
(C) 1.5 mole $[Fe(H_2O)_5SCN]SO_3$	(R) 12 mole O atoms
(D) 0.75 mole $K_2Cu(SCN)_4$	(S) 6 mole N atoms
	(T) 1.5 mole K atoms