

## Assignment

Q1. What mass of potassium nitrate ( $\text{KNO}_3$ ) would be needed to form a saturated solution in 250g of water at 293K. Given that the solubility of the salt is 32g/100g at this temperature.

[Hint :-  $\text{KNO}_3$  solute = ?      solvent = 250g      solubility = 32g/100g]

Q2.

Substance dissolved	Temp. in K				
	283	293	313	333	353
$\text{KNO}_3$	21	32	62	106	167
$\text{NaCl}$	36	36	36	37	37
$\text{KCl}$	35	35	40	46	54
$\text{NH}_4\text{Cl}$	24	37	41	55	66

- What mass of  $\text{KNO}_3$  would be needed to produce a saturated solution of  $\text{KNO}_3$  in 50g of water at 313K?
- Pragya makes a saturated solution of  $\text{KCl}$  in water at 353K and leaves the solution to cool at room temp. What would she observe as the solution cools? Explain.
- Find the solubility of each salt at 293K. Which salt has the highest solubility at this temperature?
- What is the effect of change of temperature on the solubility of a salt?