

GIRLS' HIGH SCHOOL & COLLEGE, PRAYAGRAJ

ASSIGNMENT 2

SESSION 2020-21

CLASS- 9 A, B, C, D, E

SUBJECT: CHEMISTRY

INSTRUCTIONS: The parents to ensure that their ward watches the video instructions for this assignment by clicking on the given link: <https://youtu.be/MCBvcKzDrjg>
https://youtu.be/s63_n91Vxfc

She should revise the lesson given in the book and then work on the assignment. The completed assignment is to be downloaded and filed / pasted in the subject file / copy and kept ready for submission. The day date and procedure of submission shall be notified later.

Answer the following questions:

Q1) Name:

- (a) the solution when the solvent is alcohol.
- (b) the solution in which the amount of solute is relatively more for a given mass of the solvent.

Q2) State two ways, by which a saturated solution can be changed to unsaturated solution.

Q3) How will you determine which is solute and which is solvent in a solution?

Q4) Give one example of each of the following solutions formed:

- (a) a gas in a liquid.
- (b) a solid in another solid
- (c) a gas in a gas

Q5) Why the solute cannot be separated from a solution by filtration?

Q6) Solve:

- (a) A solution contains 10 g of sodium chloride in 90 g of water. Calculate concentration of solution.
- (b) 30 ml of alcohol is mixed with 70 ml of water to get 100 ml of solution. Calculate its volume percent.

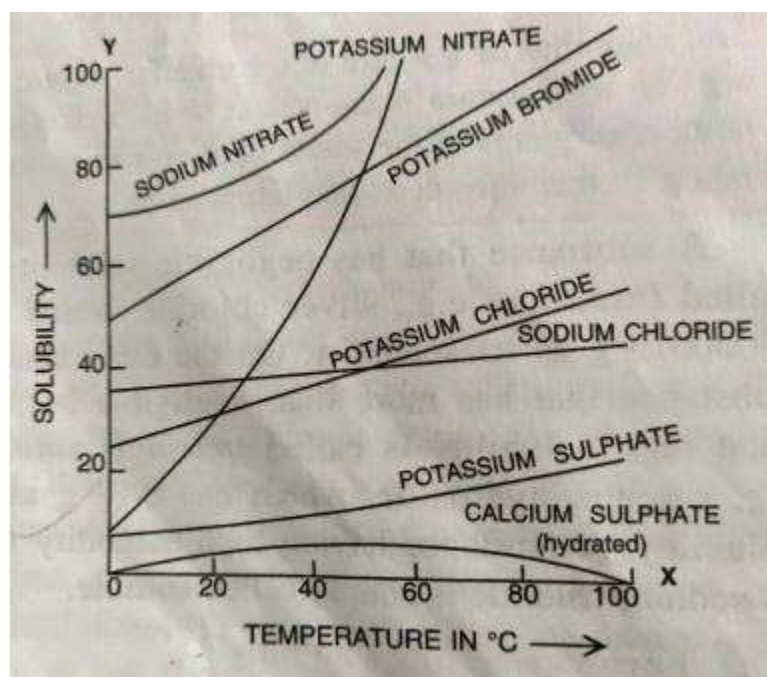
Q7) What is the effect of temperature on solubility of:

- (i) a gas in a liquid?
- (ii) a solid in a liquid?

Q8) State Henry's law.

Q9) Give three factors which affect the solubility of a solid solute in a solvent.

Q10) The graph given below shows the solubilities of some common substances:



Answer the following questions based on the graph:

- For which salt does the solubility increase most rapidly with rise in temperature?
- For which salt is there a decrease in solubility with increase in temperature?
- For which salt does the solubility slightly change with rise in temperature ?

Q11) Define:

- Crystallisation
- Seeding

Q12) Give chemical name and formula of two common substances, whose crystals have water of crystallisation.

Q13) Name two substances whose crystals do not contain water of crystallization.

Q14) What do you observe when :

- (a) Crystals of sodium chloride are heated.
- (b) Crystals of potassium nitrate are heated.

Q15) Give any two methods of obtaining crystals in laboratory.

Q16) Write your observation when hydrated copper sulphate is heated.

Q17) The following table gives the solubility at different temperatures of different salts:

TEMPERATURE IN KELVIN					
Substance dissolved	283K	293K	313K	333K	353K
KNO ₃	21	32	62	106	167
NaCl	36	36	36	37	37
KCl	35	35	40	46	54
NH ₄ Cl	24	37	41	55	66

Answer the following questions based on the table given above:

- (a) What mass of KNO₃ would be needed to produce a saturated solution of KNO₃ in 50 grams of water at 313 K?
- (b) If saturated solution of KCl is made at 353 K and then cooled at room temperature, what would you observe? Explain.
- (c) Find the solubility of each salt at 293 K.
- (d) Which salt has the lowest solubility at 283 K?
- (e) What is the effect of change of temperature on the solubility of a salt?

Q18) State the term : (Do not give examples)

- (a) When a substance absorbs moisture on exposure to moist air and dissolves in the absorbed water and turns to solution.
- (b) When a substance absorbs moisture from the atmosphere, but does not form solution.
- (c) When a compound loses its water of crystallisation on exposure to dry air.
- (d) The substance that can remove hydrogen and oxygen atoms in the ratio of 2 : 1 (in the form of water) from the compounds.

Q19) Explain why fused CaCl_2 or conc. H_2SO_4 is used in a desiccator.

Q20) Give two examples of :

- (a) Drying agents
- (b) Efflorescent substances
- (c) Deliquescent substances

Q21) Differentiate between the following with suitable examples:

- (a) A deliquescent and a hygroscopic substance.
- (b) A drying and a dehydrating agent.

Q22) What are the causes for:

- (a) Temporary hardness
- (b) Permanent hardness

Q23) State the advantages of hard water.

Q24) What is the advantage of a detergent over soap ?

Q25) Give equations to show what happens when temporary hard water is:

- (a) boiled
- (b) treated with slaked lime

Q26) State the disadvantages of using hard water.

“END”