

\_\_\_\_\_ 1) A mixture consists of sand and an aqueous salt solution. Which procedure can be used to separate the sand, salt, and water from each other?

- 1) Evaporate the water, then filter out the salt.
- 2) Evaporate the water, then filter out the sand.
- 3) Filter out the salt, then evaporate the water.
- 4) Filter out the sand, then evaporate the water.

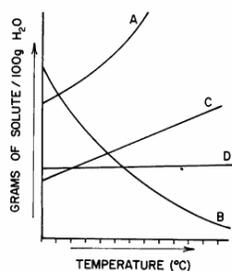
\_\_\_\_\_ 2) The solubility of  $\text{KCl}(s)$  in water depends on the

- 1) pressure on the solution
- 2) rate of stirring
- 3) size of the  $\text{KCl}$  sample
- 4) temperature of the water

\_\_\_\_\_ 3) At which temperature can water contain the most dissolved oxygen at a pressure of 1 atmosphere?

- 1)  $10.^{\circ}\text{C}$
- 2)  $20.^{\circ}\text{C}$
- 3)  $30.^{\circ}\text{C}$
- 4)  $40.^{\circ}\text{C}$

\_\_\_\_\_ 4) Base your answer to the following question on The graph below represents four solubility curves. Which curve best represents the solubility of a gas in water?



- 1) *A*
- 2) *B*
- 3) *C*
- 4) *D*

\_\_\_\_\_ 5) Which compound is *least* soluble in water at  $60.^{\circ}\text{C}$ ?

- 1)  $\text{KClO}_3$
- 2)  $\text{KNO}_3$
- 3)  $\text{NaCl}$
- 4)  $\text{NH}_4\text{Cl}$

\_\_\_\_\_ 6) At STP, which of these substances is most soluble in  $\text{H}_2\text{O}$ ?

- 1)  $\text{CCl}_4$
- 2)  $\text{CO}_2$
- 3)  $\text{HCl}$
- 4)  $\text{N}_2$

\_\_\_\_\_ 7) An unsaturated aqueous solution of  $\text{NH}_3$  is at  $90.^{\circ}\text{C}$  in 100. grams of water. According to Reference Table *G*, how many grams of  $\text{NH}_3$  could this unsaturated solution contain?

- 1) 5 g
- 2) 10. g
- 3) 15 g
- 4) 20. g

\_\_\_\_\_ 8) When an equilibrium exists between the dissolved and the undissolved solute in a solution, the solution must be

- 1) diluted
- 2) saturated
- 3) supersaturated
- 4) unsaturated

\_\_\_\_\_ 9) A solution contains 35 grams of  $\text{KNO}_3$  dissolved in 100 grams of water at  $40.^{\circ}\text{C}$ . How much *more*  $\text{KNO}_3$  would have to be added to make it a saturated solution?

- 1) 29 g
- 2) 24 g
- 3) 12 g
- 4) 4g

\_\_\_\_\_ 10) One hundred grams of water is saturated with  $\text{NH}_4\text{Cl}$  at  $50.^{\circ}\text{C}$ . According to Table *G*, if the temperature is lowered to  $10.^{\circ}\text{C}$ , what is the total amount of  $\text{NH}_4\text{Cl}$  that will precipitate?

- 1) 5.0 g
- 2) 17 g
- 3) 30. g
- 4) 50. g