

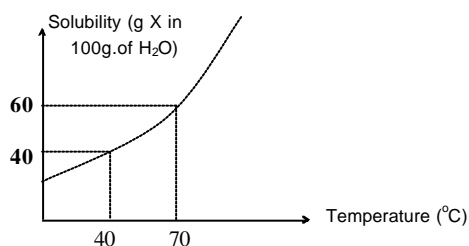
# SOLUTIONS

TEST \_\_\_\_\_

## Solutions

Date: \_\_\_\_\_

1. At 25 °C, 20 grams of salt X can be dissolved in 25 ml of water. What is the solubility of salt X at 25°C?  
A) 40      B) 60      C) 80      D) 120      E) 20
2. What will be the percent concentration of the new solution if 50g of salt is added to a 20g of solution that is 25% salt by mass?  
A) 30      B) 40      C) 45      D) 50      E) 60
3. How many grams of water must be evaporated from 240 g sugar solution that is 30% sugar by mass, to obtain 50% solution?  
A) 150      B) 125      C) 100      D) 75      E) 50
4. How many grams of water must be added to 200 grams of sugar solution that is 30% sugar by mass, to obtain 10% solution?  
A) 200      B) 300      C) 400      D) 500      E) 600



Answer the question 5, 6, 7, 8 by using the given graph.

5. At 70°C, 50g of water is used to prepare saturated solution of X. If it is cooled to 40°C, how many grams of X will precipitate?  
A) 20      B) 16      C) 12      D) 10      E) 8
6. At 40°C, 28 g of saturated solution X is prepared. If it is heated to 70°C, how many grams X must be added to saturate the solution?  
A) 5      B) 4      C) 3      D) 10      E) 12
7. What is the percent concentration of the saturated solution that is prepared at 70°C?  
A) 37.5      B) 40      C) 50      D) 60      E) 75
8. To saturate the 200g of solution that is 25 % at 40° C how many grams of water must be evaporated?  
A) 40      B) 30      C) 25      D) 50      E) 60
9. 0.1 Mg of 200 ml. NaCl and 0.2M of 200ml. of AgNO<sub>3</sub> solutions are mixed? I) 0.04 moles of Ag Cl precipitates II) Molarity of Na<sup>+</sup> ion is 0.1 M. III) Molarity of Ag<sup>+</sup> ion is 0.05M. Which of these statement(s) is/are true?  
A) I      B) I – III      C) I – II      D) III      E) II – III

10. What is the percentage by mass of solution which has the solubility of 100 g/100g water at 10°C?  
A) 25      B) 33.3      C) 50      D) 75      E) 100
11. How many milliliters is the 0.4M solution that is prepared by using 14.8 grams of Ca(OH)<sub>2</sub>? (Ca:20 H:1 O:16 )  
A) 50      B) 100      C) 200      D) 400      E) 500
12. What is the molarity of methyl alcohol (CH<sub>3</sub>OH) solution, which is 50 % methyl alcohol by volume with the density of 0.8 g/ml? (CH<sub>3</sub>OH: 32)  
A) 2.5      B) 5      C) 7.5      D) 10      E) 12.5
13. How many grams of NaOH is required to neutralize 200g of 4.9% H<sub>2</sub>SO<sub>4</sub> solution by mass? (H<sub>2</sub>SO<sub>4</sub>:98, NaOH:40)  
A) 8      B) 10      C) 20      D) 30      E) 40
14. 1<sup>st</sup> solution 300ml. of Ca(NO<sub>3</sub>)<sub>2</sub> solution  
2<sup>nd</sup> solution 400 ml. of Al (NO<sub>3</sub>)<sub>3</sub> solution  
Number of moles of NO<sub>3</sub><sup>-</sup> ions are equal in the solutions I and II. If the molarity of the solution I is 0.4 M, what is the molarity of the solution II?  
A) 0.1      B) 0.15      C) 0.2      D) 0.4      E) 0.5
15. What is the molarity of Al<sup>3+</sup> ions in the 200 ml. of Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> solution that contains 0.06 moles of SO<sub>4</sub><sup>2-</sup>ion?  
A) 0.1      B) 0.2      C) 0.3      D) 0.4      E) 0.5
16. What will be the percent concentration of the final solution, if 150g of, 20% MgCl<sub>2</sub> and 600g of 30% Mg Cl<sub>2</sub> solutions are mixed?  
A) 18      B) 20      C) 24      D) 28      E) 32
17. What is the percent concentration of 5M of HNO<sub>3</sub> solution with the density of 1.05g ml ? (HNO<sub>3</sub>:63)  
A) 10      B) 20      C) 30      D) 40      E) 50
18. How many grams of H<sub>2</sub>SO<sub>4</sub> must be used to prepare 600cm<sup>3</sup> of 3N solution? (H<sub>2</sub>SO<sub>4</sub> :98)  
A) 88.2      B) 176.4      C) 98      D) 49      E) 66.5
19. How many grams of NaOH is required to neutralize 200 g of 4.9 % H<sub>2</sub>SO<sub>4</sub> solution by mass ? (H<sub>2</sub>SO<sub>4</sub> :98, NaOH:40)  
A) 8      B) 10      C) 20      D) 30      E) 40
20. In what volume ratios should 1 M and 4 M Na<sub>2</sub>CO<sub>3</sub> solutions be mixed to obtain 1.5 M Na<sub>2</sub>CO<sub>3</sub> solution?  
A) 5/1      B) 1/5      C) 1/3      D) 3/1      E) 2/5